

**EPA Registration Number**  
**83222-30**

# ISB'S Front-end PRIA Completeness Screen

Draft 3: 10/25/07

EPA Receipt Date: <b>FEB - 5 2010</b>		EPA Reg. Number: <b>83222-GN</b>		
	Check List Item	Yes	No	N/A
1	Has the <b>PRIA Fee</b> been Paid; is a copy of the check or Pay.gov receipt included in the Submission Package?	X		
2	Is an <b>Application Form</b> (EPA Form 8570-1) Included in the Submission Package, is it completely filled out and signed including package type?	X		
3	Is a <b>Confidential Statement of Formula</b> (EPA Form 8570-29) Included in the Submission Package, is it completely filled out and signed (boxes 1-21)?	X		
4	Is a <b>Formulator's Exemption Statement</b> (EPA Form 8570-27) Included in the Submission Package?	X		
5	Is a <b>Certification with Respect to Citation of Data</b> (EPA Form 8570-34) Included in the Submission Package?		X	
6	Is a <b>Data Matrix</b> (EPA Form 8570-35) Included in the Submission Package?		X	
7	Is a <b>Label</b> Included in the Submission Package?	X		
8	Are <b>Data</b> Included in the Submission Package?		X	
9	Is the Submission an Amendment?		X	

# Material to be added to an e-Jacket/Jacket

Reg. No. 83222-30 Dec# 441990

Description: Amended CSF + label

1. ☒ Placement within the e-Jacket/jacket:

☒ Default: (chronological, top = newest)

☐ File Location: (PDF page number, i.e., "before page 45")

2. ☒ Send to Data Extraction contractors this material:

☒ Newly stamped accepted label

☐ Notification

☒ New CSF

☐ Other: \_\_\_\_\_

3. Attach this coversheet to the top of the material or jacket. It must be well organized and clipped together, NOT STAPLED. Then give the material with this coversheet to staff in the Information Services Center (Room S-4900).

Reviewer's Name: James Shore

Phone: 305-7391 Division: RD/HB

Date: 3/31/11



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

J. Oliver Products, LLC  
c/o Jane Miller  
Biologic, INC.  
115 Obtuse Hill Road  
Brookfield, CT 06804

MAR 31 2011

Dear Ms. Miller:

Subject: Amended Basic and Alternate Formulas and Label Revisions  
Clethodim 2EC Herbicide  
EPA Registration No. 83222-30  
Your Application Dated October 30, 2010

The amendment referred to above, submitted in connection with registration under section 3(c)(7)(A) of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), is acceptable provided that you:

1. Submit/cite all data required for registration/reregistration of your product under FIFRA section 3(c)(5) or 4(a) when the Agency requires all registrants of similar products to submit such data.

2. Submit storage stability (830.6317), corrosion characteristics (830.6320) and oxidation/reduction (830.6314) studies conducted according to EPA guidelines within one year from the date of this registration.

3. Make the labeling changes listed below before you release the product for shipment bearing the amended labeling:

a. The inhalation toxicity study according today's standards is in Toxicity Category IV. In the Hazards to Humans section delete "or inhaled". You may delete the "If Inhaled:..." First Aid Section, if you wish.

b. In the Physical or Chemical Hazards section add "Combustible" before "Do not use or store near neat or open flames".

c. On page 11 delete "recommendations". This implies the listed restrictions and limitations need not be followed. On page 40 delete "recommendation" in Table 12. This term no longer appears in the headings of the previous tables.

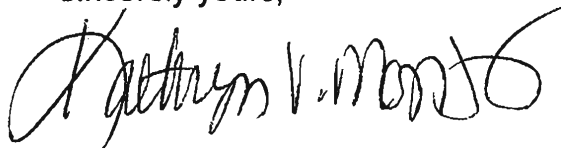
4. Submit one (1) copy of your final printed labeling before you release the product for shipment. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product bearing the amended labeling constitutes acceptance of these conditions.

The amended basic formula and alternate formula #1 dated October 25, 2010 are acceptable and have been included in the files for this product. They supersede all previously accepted ones.

A stamped copy of the label is enclosed for your records.

If you have any questions concerning this letter please contact Mr. James Stone at 703-305-7391. For your information enclosed are copies of the scientific reviews.

Sincerely yours,

A handwritten signature in black ink, appearing to read 'Kathryn V. Montague', with a stylized flourish at the end.

Kathryn V. Montague  
Product Manager (23)  
Herbicide Branch  
Registration Division (7505C)

Enclosure

**ACCEPTED  
with COMMENTS  
In EPA Letter Dated:**

MAR 31 2011

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
as amended, for the pesticide  
registered under EPA Reg. No.

83222-30

# CLETHODIM 2 EC HERBICIDE

Active Ingredient	By Wt.
*Clethodim.....	26.4%
Other Ingredients.....	73.6%
Total.....	100.0%

Contains Petroleum Distillates

\*(E)-2-[1-[[[(3-chloro-2-propenyl)oxy]imino]propyl]-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexen-1-one

Contains 2.0 lbs. clethodim per gal.

**KEEP OUT OF REACH OF CHILDREN**

## WARNING - AVISO

### SEE NEXT PAGE FOR ADDITIONAL PRECAUTIONARY STATEMENTS

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

Manufactured for:  
**J. Oliver Products, LLC**  
3187 Robertson Gin Road  
Hernando, MS 38632

Made in U.S.A.

EPA Reg. No. 83222-30  
EPA Est. No. 44616-MO-001

**NET CONTENTS:**    ☐ 1 Gallon    ☐ 2.5 Gallons    ☐ 265 Gallons    ☒ Bulk

**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS & DOMESTIC ANIMALS  
WARNING**

Causes substantial but temporary eye irritation. Avoid contact with skin. Do not get in eyes, on skin, or on clothing. Harmful if swallowed or inhaled. Avoid breathing vapors or spray mist. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

<b>FIRST AID</b>	
<b>If in eyes:</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If on skin or clothing:</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If swallowed:</b>	<ul style="list-style-type: none"> <li>• Immediately call a poison control center or doctor.</li> <li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>• Do not give any liquid to the person.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If inhaled:</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>HOT LINE NUMBER</b> Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-892-0099 for emergency medical treatment information.	
<b>NOTE TO PHYSICIANS</b> Ingestion of this product or subsequent vomiting can result in aspiration of light hydrocarbon liquid, which can cause pneumonitis. If ingested, probable mucosal damage may contraindicate the use of gastric lavage.	

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category G on an EPA chemical resistance category selection chart.

**Applicators and other handlers must wear:** long-sleeved shirt and long pants, chemical-resistant gloves such as Barrier Laminate or Viton ≥ 14 mils, shoes plus socks, and protective eyewear.

**Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.** Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

### **USER SAFETY RECOMMENDATIONS**

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

### **ENVIRONMENTAL HAZARDS**

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply where runoff is likely to occur. Do not apply where weather conditions favor drift from areas treated. Do not contaminate water when disposing of equipment washwater or rinsate.

The use of this product may pose a hazard to the federally designated endangered species of Solano Grass and Wild Rice. Use of this product is prohibited in the following areas where the species are known to exist:

Solano Grass: Solano County, California: the vernal lakes area bounded by the Union Pacific Railroad and Hastings Road to the north, Highway 113 to the east, Highway 12 to the south, and Travis Air Force Base to the west.

Wild Rice: Hays County, Texas.

### **PHYSICAL OR CHEMICAL HAZARDS**

Do not use or store near heat or open flame.

### **DIRECTIONS FOR USE**

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

**READ ENTIRE LABEL AND PAMPHLET. USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS, AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.**

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.



### **AGRICULTURAL USE REQUIREMENTS**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: coveralls, chemical-resistant gloves, such as Barrier Laminate or Viton  $\geq$  14 mils, shoes plus socks, and protective eyewear.

### **NON-AGRICULTURAL USE REQUIREMENTS**

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standards for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forest, nurseries, or greenhouses.

Keep all unprotected persons out of operating areas, or vicinity where there may be drift. Do not enter treated areas without protective clothing until sprays have dried.

### **DISCLAIMER, RISKS OF USING THIS PRODUCT, LIMITED WARRANTY AND LIMITATION OF LIABILITY**

**IMPORTANT:** Read the entire Label including this Disclaimer, Risks of Using this Product, Limited Warranty, and Limitation of Liability before using this product. If the terms are not acceptable THEN DO NOT USE THE PRODUCT; rather, return the unopened product within 15 days of purchase for a refund of the purchase price.

#### **RISKS OF USING THIS PRODUCT**

The Buyer and User (referred to collectively herein as "Buyer") of this product should be aware that there are inherent unintended risks associated with the use of this product which are impossible to eliminate. These risks include, but are not limited to, injury to plants and crops to which this product is applied, lack of control of the target pests or weeds, resistance of the target pest or weeds to this product, injury caused by drift, and injury to rotational crops caused by carryover in the soil. Such risks of crop injury, non-performance, resistance, or other unintended consequences are unavoidable and may result because of such factors as weather, soil conditions, disease, moisture conditions, irrigation practices, condition of the crop at the time of application, presence of other materials either applied in the tank mix with this product or prior to application of this product, cultural practices or the manner of use or application, (or a combination of such factors) all of which are factors beyond the control of J. Oliver Products, LLC. The Buyer should be aware that these inherent unintended risks may reduce the harvested yield of the crop in all or a portion of the treated acreage, or otherwise affect the crop such that additional care, treatment and expense are required to take the crop to harvest. If the Buyer chooses not to accept these risks, THEN THIS PRODUCT SHOULD NOT BE APPLIED. By applying this product Buyer acknowledges and accepts these inherent unintended risks AND TO THE FULLEST EXTENT ALLOWED BY LAW, AGREES THAT ALL SUCH RISKS ASSOCIATED WITH THE APPLICATION AND USE ARE ASSUMED BY THE BUYER.

J. Oliver Products, LLC shall not be responsible for losses or damages (including, but not limited to, loss of yield, increased expenses of farming the crop or such incidental, consequential or special damages that may be claimed) resulting from use of this product in any manner not set forth on the label. Buyer assumes all risks associated with the use of this product in any manner or under conditions not specifically directed or approved on the label.

#### **LIMITED WARRANTY**

J. Oliver Products, LLC warrants only that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the label, under average use conditions, when used strictly in accordance with the label and subject to the Risks of Using This Product as described above. To the extent consistent with applicable law AND AS SET FORTH ABOVE, J. OLIVER PRODUCTS, LLC MAKES NO OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED. No agent or representative of J. Oliver Products, LLC or Seller is authorized to make or create any other express or implied warranty.

#### **LIMITATION OF LIABILITY**

To the fullest extent allowed by law, J. Oliver Products, LLC or Seller is not liable for any incidental, consequential, indirect or special damages resulting from the use or handling of this product. The limitation includes, but is not limited to, loss of yield on all or any portion of the treated acreage, increased care, treatment or other expenses required to take the crop to harvest, increased finance charges or altered finance ratings, emotional or mental distress and/or exemplary damages. TO THE FULLEST EXTENT ALLOWED BY LAW, THE EXCLUSIVE REMEDY OF THE BUYER, AND THE EXCLUSIVE MAXIMUM LIABILITY OF J. OLIVER PRODUCTS, LLC OR SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT SHALL BE THE RETURN OF THE PURCHASE PRICE OF THIS PRODUCT OR, AT THE ELECTION OF J. OLIVER PRODUCTS, LLC OR SELLER, THE REPLACEMENT OF THE PRODUCT.

#### **PROMPT NOTICE OF CLAIM**

To the extent consistent with applicable law allowing such requirements J. Oliver Products, LLC must be provided notice as soon as Buyer has reason to believe it may have a claim, but in no event later than twenty-one days from date of planting, or twenty-one days from the date of application, whichever is latter, so that an immediate inspection of the affected property and growing crops can be made.

To the extent consistent with applicable law if Buyer does not notify J. Oliver Products, LLC of any claims in such period, it shall be barred from obtaining any remedy.

#### **NO AMENDMENTS**

J. Oliver Products, LLC and Seller offer this product, and Buyer accepts it, subject to the foregoing Disclaimer, Risks of Using This Product, Limited Warranty and Limitation of Liability, which may not be modified by any oral or written agreement.

#### **TANK MIXES**

**NOTICE:** Tank mixing or use of this product with any other product which is not specifically and expressly authorized by the label shall be the exclusive risk of user, applicator and/or application advisor.

Read and follow the entire label of each product to be used in the tank mix with this product.

**THE FOLLOWING STATEMENT ON CHEMIGATION WILL BE USED ONLY IF A SUPPLEMENTAL LABEL IS CREATED.**

#### **CHEMIGATION**

[Do not apply this product through any irrigation system unless the supplemental labeling on chemigation is followed. Refer to supplemental labeling entitled, "Application of CLETHODIM 2 EC Onions (dry bulbs and green) and Garlic by Chemigation", for use directions for chemigation.]

May be applied to onions and garlic by sprinkler irrigation systems. Do not apply by chemigation to any other crop, or to this crop using any other type of irrigation system.

#### **USE INFORMATION**

**FOR USE ON:** Alfalfa, Asparagus, Bean (dry) and Pea (shelled)<sup>1</sup>, Bean and Pea (succulent shelled)<sup>2</sup>, Broccoli, Cabbage, Canola\*, Carrot, Cauliflower (and other Head and Stem Brassica

Vegetables)<sup>3</sup>, Celery, Clover (grown in Idaho, Oregon and Washington only), Conifers, Cotton, Cranberry, Cucumber, Eggplant (and other Fruiting Vegetables)<sup>4</sup>, Fallow Land (and other non-producing agricultural areas), Flax\*, Garden Beet, Garlic, Herbs<sup>5</sup>, Hops, Horseradish (and other Root Vegetables)<sup>6</sup>, Legume Vegetables (edible podded)<sup>7</sup>, Lettuce, Head and Leaf (and other leafy greens)<sup>8</sup>, Melons (including Cantaloupes and Watermelons)<sup>9</sup>, Mint, Mustard Greens (and other leafy brassica greens)<sup>10</sup>, Mustard Seed\*, Non-Bearing Food Crops, Non-Crop or Non-Planted Areas, Onions (dry bulb and green), Ornamentals, Peanut (including perennial), Peppers (bell and non-bell), Potato, Radish, Rhubarb (and other Leaf Petioles)<sup>11</sup>, Safflower, Sesame, Shallots (dry bulbs and green), Squash (including Pumpkins)<sup>9</sup>, Soybeans, Strawberry, Sugar Beet, Sunflower, Sweet Potato, Tomato and Yam (and other Tuberous and Corm Vegetables)<sup>12</sup>.

\*Not for use in California

- <sup>1</sup> Other Bean (Dry) and Pea (Shelled) crops approved for use with CLETHODIM 2 EC include: Bean (*Lupinus* spp.), grain, sweet, white and white sweet; Bean (*Phaseolus* spp.), field, kidney, lima (dry), navy, pinto and tepary; Bean (*Vigna* spp.), adzuki bean, black-eyed pea, catjang, cowpea, crowder pea, moth bean, mung bean, rice bean, Southern pea, urd bean, broad (dry), chickpea (garbanzo), guar, lablab bean and lentil; Pea (*Pisum* spp.), field and pigeon
- <sup>2</sup> Other Bean and Pea (Succulent Shelled) crops approved for use with CLETHODIM 2 EC includes: Bean (*Lupinus* spp.), grain, sweet, white and white sweet; Bean (*Phaseolus* spp.), field, kidney, lima (dry), navy, pinto and tepary; Bean (*Vigna* spp.), adzuki bean, black-eyed pea, catjang, cowpea, crowder pea, moth bean, mung bean, rice bean, Southern pea, urd bean, broad (dry), chickpea (garbanzo), guar, lablab bean and lentil; Pea (*Pisum* spp.), field and pigeon
- <sup>3</sup> Other head and stem brassica vegetables approved for use with CLETHODIM 2 EC include: Chinese broccoli, Brussels sprouts, Chinese (napa) cabbage, Chinese mustard, cavalo broccolo and kohlrabi.
- <sup>4</sup> Other Fruiting Vegetables (except tomato) approved for use with CLETHODIM 2 EC include: eggplant, groundcherry, pepino, peppers (all) and tomatillo.
- <sup>5</sup> Other Herb crops approved for use with CLETHODIM 2 EC include: angelica, balm, basil, borage, burnet, camomile, catnip, chervil (dried), chive, Chinese chive, clary, coriander (leaf), costmary, culantro (leaf), curry (leaf), dill (dillweed), horehound, hyssop, lavender, lovage (leaf), marigold, marjoram (*origanum* spp.), nasturtium, parsley (dried), pennyroyal, rosemary, rue, sage and savory, summer and winter.
- <sup>6</sup> Other root vegetables approved for use with CLETHODIM 2 EC include: burdock, edible; celeriac; chervil, turnip-rooted; chicory; ginseng; parsley, turnip-rooted; parsnip; radish, oriental; rutabaga; salsify; salsify, black; salsify, Spanish; skirret and turnip.
- <sup>7</sup> Other Edible Podded Legume Vegetable crops approved for use with CLETHODIM 2 EC include: Bean (*Phaseolus* spp.), runner, snap and wax; Bean (*Vigna* spp.), asparagus, Chinese longbean, moth, yardlong, jackbean; Pea (*Pisum* spp.), dwarf, edible-pod, snow, sugar snap, pigeon and sword bean.
- <sup>8</sup> Other Leafy Greens crops approved for use with CLETHODIM 2 EC include: amaranth (Chinese spinach, leafy amaranth and tampala), arugula (roquette), chervil, chrysanthemum (edible-leaved and garland), corn salad, cress (garden, yellow rock and winter), dandelion, dock (sorrel), endive (escarole), lettuce (head and leaf), orach, parsley, purslane (garden and winter), radicchio (red chicory), spinach (New Zealand and Vine (Indian and malabar).
- <sup>9</sup> Other cucurbit crops approved for use with CLETHODIM 2 EC include: Chayote (fruit), Chinese Wax Gourd, Citron Melon, Edible Gourd, Gherkin and Muskmelons (all) including Honeydew Melon.
- <sup>10</sup> Other leafy brassica greens approved for use with CLETHODIM 2 EC include: broccoli raab, Chinese (bok choy) cabbage, collards, kale, mizuna, mustard greens, mustard spinach, rape greens and turnip greens.
- <sup>11</sup> Other leaf petiole crops approved for use with CLETHODIM 2 EC include: cardoon, celtuce, Chinese celery, Florence fennel, and Swiss chard.
- <sup>12</sup> Other tuber and corm vegetables approved for use with CLETHODIM 2 EC include: arracacha, arrowroot, Chinese artichoke, Jerusalem artichoke, edible burdock, edible canna, bitter and sweet cassava, chayote (root), chufa, dasheen (taro), ginger, leren, tanier, turmeric and bean yam.

CLETHODIM 2 EC is not recommended for use on vegetable crops being grown for seed production unless specific use directions are provided.

CLETHODIM 2 EC is a selective postemergence herbicide for control of annual and perennial grasses.

CLETHODIM 2 EC does not control sedges or broadleaf weeds.

Repeated use of CLETHODIM 2 EC (or similar postemergence grass herbicides with the same mode of action) may lead to the selection of naturally occurring biotypes that are resistant to these products in some grass species.

If poor performance occurs and cannot be attributed to adverse weather or application conditions, a resistant biotype may be present. This is most likely to occur in fields where other control strategies such as crop rotation, mechanical removal, and other classes of herbicides are not used from year to year.

Do not allow CLETHODIM 2 EC to come in contact with desirable grass crops such as corn, rice, sorghum, small grains, or turf, as these and other grass crops will be injured or killed. Minor leaf spotting may occur on treated plants under certain environmental conditions. New foliage is not affected.

#### **Control Symptoms**

Treated grass weeds show a reduction in vigor and growth. Early chlorosis/necrosis of younger plant tissue is followed by a progressive collapse of the remaining foliage. Symptoms will generally be observed in 7 to 14 days after application, depending on grass species treated and environmental conditions.

### **APPLICATION INFORMATION**

#### **Timing of Applications**

Apply CLETHODIM 2 EC postemergence to actively growing grasses according to rate table recommendations. Applications made to grass plants stressed by insufficient moisture, or hot or cold temperatures, or to grass plants exceeding recommended growth stages may result in unsatisfactory control. Do not apply under these conditions.

In arid regions where irrigation is used to supplement limited rainfall, CLETHODIM 2 EC should be applied as soon as possible, after irrigation (within 7 days). In arid regions, a second application of CLETHODIM 2 EC will generally provide more effective control of perennial grass weeds than a single application. Make second application to actively growing grass 2 to 3 weeks after emergence of new growth.

Cultivation of treated grasses 7 days prior to or within 7 days after application of CLETHODIM 2 EC may reduce weed control. DO NOT APPLY CLETHODIM 2 EC if rainfall is expected within one hour, since control may be reduced.

## ADDITION OF ADJUVANT OR CROP OIL CONCENTRATE

CROP	ADJUVANT
Alfalfa, Cotton, Bean (dry) & Pea (shelled), Edible Podded Legume Vegetables, Peanuts (including perennial), Potato, Soybean, Bean & Pea (succulent shelled), Sugar Beet and Sunflower	Always use a crop oil concentrate* at 1.0 qt./A by ground or 1 % v/v (but not less than 1 pt./A) in the finished spray volume by air.  1 to 2 qts./A of liquid fertilizer (10-34-0, 28%N or 32%N), or an equivalent amount (2.5 to 4.0 lbs./A) of spray grade ammonium sulfate (AMS) may be added to CLETHODIM 2 EC applications, in addition to the recommended rate of crop oil concentrate. The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
Asparagus, Canola, Carrot, Clover, Cranberry, Cucurbits, Flax, Fruiting Vegetables (except Tomato), Garden Beet, Garlic, Head & Stem Brassica Vegetables, Herbs, Hops, Leaf Petioles, Leafy Brassica Greens, Leafy Greens, Mint, Mustard Seed, Onion (Dry Bulb & Green), Root Vegetables, Safflower, Sesame, Shallots (Dry Bulb & Green), Strawberry, Sweet Potato (Yam & other Tuberous and Corm Vegetables except Potato) and Tomato	Always use a crop oil concentrate at 1% v/v in the finished spray volume unless tank mix instructions indicate otherwise.  Addition of liquid fertilizer is not recommended for these crops.
Non-Bearing Food Crops, Ornamental Plants,	Add a non-ionic surfactant containing at least 80% active ingredient at the rate of 1 pt. per 50 gals. (0.25% v/v). Use of crop oil concentrate is not recommended since it may injure flowers and foliage.
Conifer Trees, Fallow Land (and other non-producing agricultural areas), and Non-Crop or Non-planted Areas	Always use a crop oil concentrate containing at least 15% emulsifier at 1% v/v (but not less than 1 pt./A) in the finished spray volume.

\*Acceptable crop oil concentrates would be those that contain a minimum of 80% oils and 15% emulsifier. A crop oil concentrate must contain either a petroleum or vegetable oil base and must meet all the following criteria: be non phytotoxic, contain only EPA-exempt ingredients, provide good mixing quality, and be successful in local experience. Highly refined vegetable oils have proven more satisfactory than unrefined vegetable oils.

### Ground Application

Use of sufficient spray volumes and pressure is essential to ensure complete coverage. Use a minimum of 5 gals. and a maximum of 40 gals. of spray solution per acre. Under the following conditions a minimum of 10 gals. per acre is required: ultra narrow row cotton, narrow row soybeans, broadleaf herbicide tank mixes, perennial grasses, volunteer corn, drought or stress conditions, heavy grass pressure or when grasses are at or near maximum height. Failure to use a minimum of 10 gals. per acre under these conditions can result in poor coverage and reduced grass control requiring repeat applications. Spray pressures should reflect a minimum of 30 psi and a maximum of 60 psi at the nozzle. Do not use flood nozzles.

Applications to onions (dry bulbs and green), garlic, and shallots (dry bulbs and green) should be made in a minimum of 20 gals. of spray solution per acre.

### **Air Application**

Use a minimum of 3 gals. of spray solution per acre unless otherwise directed in this label. Increase spray volumes up to 10 gals. as grass or crop foliage becomes dense. For onions (dry bulbs and green), garlic, or shallots (dry bulbs and green): When applying by air do not exceed 8 fl. oz./A in a single application. In California, air applications to onions, garlic or shallots should be made in a minimum of 20 gals. of spray solution per acre. In states other than California, air application to onions, garlic, or shallots should be made in a minimum of 10 gals. of spray solution per acre.

**NOTE: Crop injury may occur when CLETHODIM 2 EC is applied to onions, garlic or shallots with aerial equipment.**

### **Spot Treatment**

When using hand sprayers or high volume sprayers utilizing hand guns, mix 1/4% to 1/2% (0.33 oz. to 0.65 oz. per gal.) CLETHODIM 2 EC and treat to wet vegetation, while not allowing runoff of spray solution. For uses requiring crop oil concentrate, include crop oil concentrate at 1% (1.3 oz. per gal.) by volume. For uses requiring non-ionic surfactant, include non-ionic surfactant at 1/4% (0.33 oz. per gal.) by volume.

**NOTE: If CLETHODIM 2 EC is applied as a spot treatment, care should be taken to not exceed the maximum rate allowed on a "per acre" basis or crop injury may occur.**

### **CHEMIGATION - ONION (Dry Bulb and Green) AND GARLIC SPRINKLER IRRIGATION APPLICATION**

**Do not apply CLETHODIM 2 EC by chemigation in the states of Idaho, Montana, Oregon and Washington.**

Apply CLETHODIM 2 EC at the high rate recommended for annual grasses (16 fl. oz. per acre) when the grass height is at the low end of the range (application to larger grasses may not provide adequate control). Add a crop oil concentrate containing at least 15% emulsifier at 1 quart per acre.

Apply CLETHODIM 2 EC in 0.1 to 0.2 acre-inch of water either at the end of a regular irrigation set or as a separate application not associated with a regular irrigation using the least amount of water that provides proper distribution and coverage. Application of more than label recommended quantities of irrigation water per acre may result in decreased product performance by removing the chemical from the zone of effectiveness. Use a metering device to inject the CLETHODIM 2 EC into the irrigation water at a constant flow. Constant agitation must be maintained in the chemical supply tank during the entire period of herbicide application. Inject the product with a positive displacement pump into the main line ahead of a right angle turn to ensure adequate mixing. Allow time for all lines to flush the herbicide through all nozzles before turning off irrigation water. To ensure the lines are flushed and free of remaining herbicide, a dye indicator may be injected into the lines to mark the end of the application period.

It is not recommended that CLETHODIM 2 EC be applied through an irrigation system connected to a public water system. Public water system means a system for the provision to the public of piped water for human consumption, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

### **Use Precautions**

1. Apply this product only through sprinkler irrigation systems including center pivot, lateral move, end tow, side (wheel) roll, travelers, big gun, solid set, or hand move. Do not apply this product through any other type of irrigation system.
2. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop may result from

non-uniform distribution of treated water.

3. If you have any questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
4. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the label-prescribed safety devices for public water supplies are in place.
5. A person knowledgeable of the chemigation system and responsible for its operation or under supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.
6. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
7. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
8. The pesticide injection pipeline must also contain a functional, normally closed solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
9. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
10. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
11. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
12. Do not apply when wind speed favors drift beyond the area intended for treatment.

## RESTRICTIONS AND LIMITATIONS

- Do not apply if rain is expected within 1 hour of application as control may be unsatisfactory.
- Do not apply a postemergence broadleaf herbicide within one day following application of CLETHODIM 2 EC or reduced grass control may result.
- CLETHODIM 2 EC is not recommended for use on vegetable crops being grown for seed production unless specific use directions are provided.
- For canola, do not apply more than 6 fl. oz. of CLETHODIM 2 EC per acre per season. For clover, flax, mustard seed and radish crops, do not apply more than 16 fl. oz. of CLETHODIM 2 EC (0.25 lb. ai) per acre per season. For all other crops, do not apply more than 32 fl. oz. of CLETHODIM 2 EC (0.50 lb. ai) per acre per season. Application on Long Island, New York, is restricted to no more than 16 fl. oz. of CLETHODIM 2 EC (0.25 lb. ai) per acre per season.
- Do not apply more than 8 fl. oz./A of CLETHODIM 2 EC **per application** to the following crops: asparagus, brassica vegetables (head and stem), bean (succulent shelled), carrot, cranberry, cucurbits, flax, fruiting vegetables (except tomato), garden beet, green onion, herbs, hops, leaf petioles, leafy brassica greens, leafy greens, legume vegetables (edible podded), non-bearing food crops, pea (shelled), pea (succulent shelled), root vegetables, safflower, sesame and strawberry. Do not apply more than 6 fl. oz./A of CLETHODIM 2 EC per application to canola or mustard seed. For all other crops, do not apply more than 16 fl. oz. of CLETHODIM 2 EC (0.25 lb. ai) per acre per application. **Exceeding these recommendations may result in unacceptable crop injury.**
- Do not apply under conditions of stress. Applying CLETHODIM 2 EC under conditions that do not promote active grass growth will reduce herbicide effectiveness. These conditions include drought, excessive water, extremes in temperature, low humidity and grasses either partially controlled or stunted from prior pesticide applications. Grasses under these kinds of stressful conditions will not absorb and translocate CLETHODIM 2 EC effectively, and will be less susceptible to herbicide activity.
- Optimal perennial grass control can be obtained if rhizomes or stolons are cut up by preplant tillage practices, (discing, plowing, etc.) to stimulate maximum emergence of grass shoots. Cultural practices, such as continuous no-tillage in which the perennial grass rhizomes or stolons are not cut up, result in a very staggered, non-uniform weed emergence. Due to this non-uniform weed emergence, no fewer than 2 CLETHODIM 2 EC applications per season per year are recommended at the appropriate weed-growth stage rate under continuous no-till conditions.
- Grass crops such as corn, rice, sorghum, small grains, or turf, etc. are highly sensitive to CLETHODIM 2 EC.
- While all the vegetable crops on this label have been tested and are tolerant to CLETHODIM 2 EC, not all specialty varieties of these crops have been tested. It is advised that, before applying CLETHODIM 2 EC to specialty varieties of vegetable crops on this label, crop tolerance be investigated first using a small section of the field. It is possible that injury symptoms can occur. Symptoms may appear as leaf speckling or stunting.
- Always read and follow the restrictions and limitations for all products whether used alone or in a tank mix. The most restrictive labeling of any product used applies in tank mixtures,



including all crop rotational and other crop restrictions.

- Tank mixes of CLETHODIM 2 EC and broadleaf herbicides may result in reduced grass control. If grass regrowth occurs, an additional application of CLETHODIM 2 EC may be necessary. **AVOID SPRAY DRIFT.**
- Do not allow spray from ground or aerial equipment to drift onto adjacent land or crops. When drift may be a problem, do everything possible to reduce spray drift, including:
  1. Do not spray if wind speeds are or become excessive.
  2. Do not spray if wind speed is 10 mph or greater. If sensitive crops or plants are downwind, extreme caution must be used under all conditions.
  3. Do not spray if winds are gusty.
  4. Use extreme caution when conditions are favorable for drift (high temperatures, drought, low relative humidity), especially when sensitive plants are located nearby.
  5. Do not apply when a temperature inversion exists. If inversion conditions are suspected, consult with local weather services before making an application.
  6. Further reductions in drift can be obtained by:
    - a) Using large droplet size sprays. Do not use nozzles that produce small droplets. Orient nozzles downward and slightly backward as needed to reduce drift for ground applications.
    - b) Orienting nozzles straight back with the windstream, using straight stream orifices for aerial applications. Use the lowest number of nozzles practical with the largest possible orifice size to obtain the minimum 3 GPA volume. Application height and boom length should be set according to manufacturer's instructions to minimize drift.
    - c) Increasing the volume of spray mixture (for example, a minimum of 10 GPA for ground applications) by using higher flow rate nozzles. Using lower pressure with the appropriate nozzle to obtain higher volumes will also reduce drift.
    - d) Applying as close to target plants as practical while maintaining a good spray pattern for adequate coverage.

**Do not apply under conditions involving possible drift to food, forage or other plantings that might be damaged or the crops thereof rendered unfit for sale, use or consumption.**

**CROP SPECIFIC RESTRICTIONS AND LIMITATIONS FOR CLETHODIM 2 EC**

Crops <sup>(1)</sup>	Minimum Time From Application to Harvest (PHI)	Use Rates Per Acre	Crop Oil Concentrate Rates Per Acre <sup>(2)</sup>	Special Use Instructions
<b>Alfalfa</b> including: Sainfoin Holy Clover Birdsfoot trefoil <sup>(3)</sup>	15 days before grazing, feeding or harvesting (cutting) for forage or hay	6-16 fl. oz. <sup>(4)</sup>	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air <sup>(5)</sup>	Refer to tank mix partners for feeding, grazing and harvesting restrictions. <sup>(5,6)</sup>  The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass,

**CROP SPECIFIC RESTRICTIONS AND LIMITATIONS FOR CLETHODIM 2 EC**

<b>Crops<sup>(1)</sup></b>	<b>Minimum Time From Application to Harvest (PHI)</b>	<b>Use Rates Per Acre</b>	<b>Crop Oil Concentrate Rates Per Acre<sup>(2)</sup></b>	<b>Special Use Instructions</b>
				red rice, wild oats, volunteer cereals, and volunteer corn.
<b>Asparagus</b>	1 day	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Bean, Dry</b> including: Bean ( <i>Lupinus</i> spp.) Grain Sweet White White Sweet Bean ( <i>Phaseolus</i> spp.) Field Kidney Lima (dry) Navy Pinto Tepary Bean ( <i>Vigna</i> spp.) Adzuki Bean Black-eyed Pea Catjang Cowpea Crowder Pea Moth Bean Mung Bean Rice Bean Southern Pea Urd Bean Broad (dry) Chickpea (garbanzo) Guar Lablab Bean Lentil	30 days	6-16 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(6)</sup>	Do not apply more than 16 fl. oz./A per application.  For repeat applications make on a minimum of a 14 day interval.  Refer to appropriate Table for reduced rate recommendations for the control of small annual grasses.  The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals and volunteer corn.
<b>Bean, Succulent Shelled</b> including: Bean ( <i>Phaseolus</i> spp.) Broad Bean (succulent) Lima Bean (green) Bean ( <i>Vigna</i> spp.) Black-eyed Pea Cowpea Southern Pea	21 days	6-8 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(6)</sup>	Refer to appropriate Table for reduced rate recommendations for the control of small annual grasses.  Do not apply more than one (1) application per acre per season.  The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals and volunteer corn.
<b>Beet, Garden</b>	30 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.

**CROP SPECIFIC RESTRICTIONS AND LIMITATIONS FOR CLETHODIM 2 EC**

<b>Crops<sup>(1)</sup></b>	<b>Minimum Time From Application to Harvest (PHI)</b>	<b>Use Rates Per Acre</b>	<b>Crop Oil Concentrate Rates Per Acre<sup>(2)</sup></b>	<b>Special Use Instructions</b>
<b>Brassica Vegetables, Head &amp; Stem</b> including: Broccoli Brussels sprouts Cabbage Cauliflower	30 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application. For repeat applications make on a minimum of a 14 day interval.
<b>Canola</b>	70 days	4-6 fl. oz.	1% v/v in the finished spray volume.	Do not apply after crop has begun bolting. Crop injury may occur when CLETHODIM 2 EC is applied during the bloom period. Do not apply more than 6 oz./A in a single application. Do not exceed 6 fl. oz./A in a season.
<b>Carrot</b>	30 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application. For repeat applications make on a minimum of a 14 day interval.
<b>Clover</b>	15 days before grazing, feeding, or harvesting (cutting) for forage or hay	6-16 fl. oz.	1% v/v in the finished spray volume.	For use on clover grown in the states of Idaho, Oregon and Washington only. Do not exceed 16 fl. oz./A in a season.
<b>Cotton</b>	60 days	6-16 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	Do not graze treated fields or feed treated forage or hay to livestock. The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
<b>Cranberry</b>	30 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application. Do not apply between the "hook" stage and full fruit set. For repeat applications make on a minimum of a 14 day interval.
<b>Cucurbits</b> including: Chayote (fruit) Chinese Wax Gourd Citron Melon Cucumber Gherkin Gourd, Edible Muskmelons (all) including: Cantaloupes Honeydew Melon Pumpkin Squash (all) Watermelon	14 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application. For repeat applications make on a minimum of a 14 day interval.

**CROP SPECIFIC RESTRICTIONS AND LIMITATIONS FOR CLETHODIM 2 EC**

<b>Crops<sup>(1)</sup></b>	<b>Minimum Time From Application to Harvest (PHI)</b>	<b>Use Rates Per Acre</b>	<b>Crop Oil Concentrate Rates Per Acre<sup>(2)</sup></b>	<b>Special Use Instructions</b>
<b>Fallow Land</b> <b>Conifer Trees</b> (and other non-producing agricultural areas) <b>Non-Crop or Non-Planted Areas</b>	N/A	6-16 fl. oz.	1% v/v (but not less than 1 pt./A) in the finished spray volume using a crop oil concentrate containing at least 15% emulsifier.	Do not plant any crop for 30 days after application unless clethodim is registered for use in that crop.
<b>Flax</b>	60 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Apply prior to bloom. Crop injury may occur when CLETHODIM 2 EC is applied during the bloom period.  Do not apply more than 8 fl. oz./A in a single application.  Do not exceed 16 fl. oz./A in a season.
<b>Fruiting Vegetable</b> (except Tomato) including: Eggplant Groundcherry Pepino Peppers (all) Tomatillo	20 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Herbs including:</b> Angelica Balm Basil Borage Burnet Camomile Catnip Chervil (dried) Chive Chive, Chinese Clary Coriander (leaf) Costmary Culantro (leaf) Curry (leaf) Dill (dillweed) Horehound Hyssop Lavender Lovage (leaf) Marigold Marjoram ( <i>Origanum</i> spp.) Nasturtium Parsley (dried) Pennyroyal Rosemary Rue Sage Savory, Summer and Winter	14 days	6-8 fl. oz.	1% v/v in the finished spray volume.	CLETHODIM 2 EC has not been tested on all herbs, and herb varieties. It is the responsibility of the user to test CLETHODIM 2 EC on a small portion of the crop to be treated before treating the entire field.  Crop tolerance should be verified to CLETHODIM 2 EC on a small area of the herb crop, at the desired CLETHODIM 2 EC rate and with the same crop oil concentrate that will be used on the herb field. If no crop response is evident seven (7) days after treatment, CLETHODIM 2 EC may be used on the entire field at the rate tested and with the same crop oil used in the tolerance test.  Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.

**CROP SPECIFIC RESTRICTIONS AND LIMITATIONS FOR CLETHODIM 2 EC**

<b>Crops<sup>(1)</sup></b>	<b>Minimum Time From Application to Harvest (PHI)</b>	<b>Use Rates Per Acre</b>	<b>Crop Oil Concentrate Rates Per Acre<sup>(2)</sup></b>	<b>Special Use Instructions</b>
<b>Hops</b>	21 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.

**CROP SPECIFIC RESTRICTIONS AND LIMITATIONS FOR CLETHODIM 2 EC**

<b>Crops<sup>(1)</sup></b>	<b>Minimum Time From Application to Harvest (PHI)</b>	<b>Use Rates Per Acre</b>	<b>Crop Oil Concentrate Rates Per Acre<sup>(2)</sup></b>	<b>Special Use Instructions</b>
<b>Leaf Petioles</b> including: Cardoon Celery Celtuce Chinese Celery Fennel, Florence (finocchio) Rhubarb Swiss Chard	30 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Leafy Brassica Greens</b> including: Broccoli Raab Cabbage, Chinese (bok choy) Collards Kale Mizuna Mustard Greens Mustard Spinach Rape Greens Turnip Greens	14 days	6-8 fl. oz.	1 % v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Leafy Greens</b> including: Amaranth Chinese Spinach Leafy Amaranth Tampala Arugula (roquette) Chervil Chrysanthemum; Edible-leaved Chrysanthemum, Garland Corn Salad Cress Garden Upland (yellow rock and winter) Dandelion Dock (sorrel) Endive (escarole) Lettuce, Head and Leaf Orach Parsley Purslane Garden Winter Radicchio (red chicory) Spinach New Zealand Vine (indian and malabar)	14 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.

**CROP SPECIFIC RESTRICTIONS AND LIMITATIONS FOR CLETHODIM 2 EC**

<b>Crops<sup>(1)</sup></b>	<b>Minimum Time From Application to Harvest (PHI)</b>	<b>Use Rates Per Acre</b>	<b>Crop Oil Concentrate Rates Per Acre<sup>(2)</sup></b>	<b>Special Use Instructions</b>
<b>Legume Vegetables, Edible Podded</b> including: Bean ( <i>Phaseolus</i> spp.) Runner Snap Wax Bean ( <i>Vigna</i> spp.) Asparagus Chinese Longbean Moth Yardlong Jackbean Pea ( <i>Pisum</i> spp.) Dwarf Edible-pod Snow Sugar Snap Pigeon Sword Bean	21 days	6-8 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	Do not apply more than 8 fl. oz./A in a single application.  Do not apply more than one (1) application per acre per season.  For peas apply before bloom, but no later than 21 days before harvest.  Refer to appropriate Table for reduced rate recommendations for the control of small annual grasses.  The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
<b>Mint</b>	21 days	6-16 fl. oz. <sup>(4)</sup>	1 qt. by ground or 1% v/v (but not less than 1 pt./A by air.)	Do not apply more than 16 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Mustard Seed</b>	75 days	4-6 fl. oz.	1% v/v in the finished spray volume.	Do not apply after crop has begun bolting. Crop injury may occur when CLETHODIM 2 EC is applied during the bloom period.  Do not apply more than 6 fl. oz./A in a single application.  Do not exceed 16 fl. oz./A in a season.
<b>Onion</b> (Dry Bulb Only) <b>Garlic</b> <b>Shallot</b> (Dry Bulb Only)	45 days	6-16 fl. oz. <sup>(7), (8)</sup>	1% v/v in the finished spray volume.	Minimum of 20 gals./A spray volume by ground in entire U.S.  Minimum of 20 gals./A spray volume by air in California. <sup>(9)</sup>  In states other than California, air applications to onions, garlic or shallots should be made in a minimum of 10 gals./A.
<b>Onion, Green</b> including: Green Eschalot Green Shallot Japanese Bunching Onion Leeks Scallion or Spring Onion	14 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.

**CROP SPECIFIC RESTRICTIONS AND LIMITATIONS FOR CLETHODIM 2 EC**

<b>Crops<sup>(1)</sup></b>	<b>Minimum Time From Application to Harvest (PHI)</b>	<b>Use Rates Per Acre</b>	<b>Crop Oil Concentrate Rates Per Acre<sup>(2)</sup></b>	<b>Special Use Instructions</b>
<b>Ornamentals</b>	N/A	6-16 fl. oz.	Use of crop oil concentrate is not recommended since it may injure flowers and foliage. See Special Use Instructions.	Add a non-ionic surfactant containing at least 80% active ingredient at the rate of 1 pt. per 50 gals. (0.25% v/v).  Sugar maples cannot be tapped for syrup within one year of CLETHODIM 2 EC application.  Do not apply more than 8 fl. oz./A in a single application to non-bearing food crops.
<b>Non-Bearing Food Crops</b>	N/A	6-8 fl. oz. <sup>(8)</sup>		
<b>Pea, Shelled</b> including: Pea ( <i>Pisum</i> spp.) Field Pigeon	30 days	6-8 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	Do not apply more than 8 fl. oz./A per application.  Do not apply more than one (1) application per acre per season.  Apply before bloom but not later than 30 days prior to harvest. <sup>(10)</sup>  Refer to appropriate Table for reduced rate recommendations for the control of small annual grasses.  The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals and volunteer corn.
<b>Pea, Succulent Shelled</b> including: Pea ( <i>Pisum</i> spp.) English Pea Garden Pea Green Pea Pigeon Pea	21 days	6-8 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	Do not apply more than 8 fl. oz./A per application.  Do not apply more than one (1) application per acre per season.  Apply before bloom but not later than 21 days prior to harvest. <sup>(10)</sup>  Refer to appropriate Table for reduced rate recommendations for the control of small annual grasses.  The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals and volunteer corn.
<b>Peanut (including Perennial)</b>	40 days	6-16 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.



**CROP SPECIFIC RESTRICTIONS AND LIMITATIONS FOR CLETHODIM 2 EC**

<b>Crops<sup>(1)</sup></b>	<b>Minimum Time From Application to Harvest (PHI)</b>	<b>Use Rates Per Acre</b>	<b>Crop Oil Concentrate Rates Per Acre<sup>(2)</sup></b>	<b>Special Use Instructions</b>
<b>Potato</b>	30 days	6-16 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
<b>Radish</b>	15 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  Do not apply more than 16 fl. oz./A (0.25 lb. ai) per acre in a season.  For repeat applications make on a minimum of a 14 day interval.
<b>Root Vegetables</b> (except Radish), including: Chicory Ginseng Horseradish Turnip	30 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Safflower</b>	70 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Sesame</b>	14 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply during flowering.  Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Soybean</b>	60 days	6-16 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	Do not graze treated fields or feed treated forage or hay to livestock.  Refer to appropriate Table for reduced rate recommendations for the control of small annual grasses.  The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
<b>Strawberry</b>	4 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.

# CROP SPECIFIC RESTRICTIONS AND LIMITATIONS FOR CLETHODIM 2 EC

Crops <sup>(1)</sup>	Minimum Time From Application to Harvest (PHI)	Use Rates Per Acre	Crop Oil Concentrate Rates Per Acre <sup>(2)</sup>	Special Use Instructions
<b>Sugar Beet</b>	40 days	6-16 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	Refer to appropriate Table for reduced rate recommendations for the control of small annual grasses.  The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
<b>Sunflower</b>	70 days	6-16 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
<b>Sweet Potato, Yam and other Tuberous and Corn Vegetables (except Potato) including:</b> Artichoke Chinese Jerusalem Cassava Bitter Sweet Ginger	30 days	6-16 fl. oz.	1% v/v in the finished spray volume.	The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome, Johnsongrass, red rice, wild oats, volunteer cereals and volunteer corn.
<b>Tomato</b>	20 days	6-16 fl. oz.	1% v/v in the finished spray volume.	For repeat applications make on a minimum of a 14 day interval.

N/A = Not Applicable

- 1 CLETHODIM 2 EC is not recommended for use on vegetable crops being grown for seed production unless specific use directions are provided.
- 2 Acceptable crop oil concentrates would be those which contain a minimum of 80% oils and 15% emulsifier. A crop oil concentrate must contain either a petroleum or vegetable oil base and must meet all the following criteria: be non phytotoxic, contain only EPA-exempt ingredients, provide good mixing quality and be successful in local experience. Highly refined vegetable oils have proven more satisfactory than unrefined vegetable oils. See the Addition of Adjuvant and Crop Oil Concentrate section for further information.
- 3 CLETHODIM 2 EC may be applied to seedling or established alfalfa grown for seed, hay, silage, green chop or direct grazing.
- 4 For weed control in established alfalfa and mint, the minimum use rate is 10 fl. oz./A.
- 5 1 to 2 qts./A of liquid fertilizer (10-34-0, 28%N or 32%N), or an equivalent amount (2.5 to 4.0 lbs./A) of spray grade ammonium sulfate (AMS) may be added to CLETHODIM 2 EC applications, in addition to the recommended rate of crop oil concentrate.
- 6 Do not apply CLETHODIM 2 EC plus 2,4-DB as a tank mix to alfalfa unless the 60 day feeding, grazing, and harvesting restriction on the 2,4-DB label can be observed.
- 7 For ground applications to garlic or shallot, do not exceed 8 fl. oz./A in a single application. For air applications to onion, garlic or shallot, do not exceed 8 fl. oz./A in a single application. For garlic and shallot, do not exceed 2 applications per season. In CA for air applications to onion, do not exceed 2

applications per season.

- 8 If CLETHODIM 2 EC is applied as a spot treatment to onion, garlic, shallot, or non-bearing food crops, care should be taken to not exceed the maximum rate allowed on a "per acre" basis or crop injury may occur.
- 9 In California, do not apply CLETHODIM 2 EC to onion, garlic, or shallot until the crop has at least two full leaves. In California, 14 day spray intervals are recommended between the application of CLETHODIM 2 EC and liquid nitrogen or other herbicide applications. Injury to crop may occur when shorter intervals are observed.
- 10 Applications of CLETHODIM 2 EC to peas during the bloom period could result in severe crop injury, including loss of yield and delayed maturity.

#### IMPORTANT

Plant tolerance to CLETHODIM 2 EC at labeled rates has been found to be acceptable for the indicated genera and species listed below. Due to variability within species, crop growth stage, environmental conditions, and application techniques, it is recommended that the user determine if the herbicide can be used safely on a few plants prior to widespread application. Neither the seller nor the manufacturer of CLETHODIM 2 EC have investigated the safety factor to plants not listed on the label.

### NON-BEARING FOOD CROPS

**CLETHODIM 2 EC SHOULD NOT BE APPLIED TO NON-BEARING FRUIT OR NUT CROPS WHICH ARE GROWN FOR ROOT STOCK.**

**Crop injury to non-bearing fruit and nut crops can occur if CLETHODIM 2 EC is improperly applied. CLETHODIM 2 EC should not be applied directly over the top of these plant types. Instead, spray should be directed at the base of the plant where grassy weeds are growing near the ground.**

Non-bearing fruit and nut crops are plants which will not bear fruit or nuts for at least one year following CLETHODIM 2 EC application.

COMMON NAME	SCIENTIFIC NAME
Apples	<i>Malus</i> spp.
Berries	<i>Vaccinium</i> spp.
	<i>Rubus</i> spp.
Cherry, Sweet	<i>Prunus avium</i>
Citrus Fruits	<i>Citrus</i> spp.
Grapes	<i>Vitis</i> spp.
Olives	<i>Olea</i> spp.
Peach	<i>Prunus persica</i>
Pears	<i>Pyrus communis</i>
Prunes	<i>Prunus</i> spp.
Stone Fruits	<i>Prunus</i> spp.
Strawberries	<i>Fragaria</i> spp.
Tree Nuts	
Almond	<i>Prunus triloba</i>
Filbert	<i>Corylus maxima</i>
Pecan	<i>Carya illinoensis</i>
Pistachio	<i>Pistacia vera</i>
Walnut	<i>Juglans</i> spp.

## CONIFER TREES

CLETHODIM 2 EC can be used to control labeled grasses in Christmas tree farms, conifer nurseries, and conifer plantations (but not in forests).

COMMON NAME	SCIENTIFIC NAME
Arborvitae, American	<i>Thuja occidentalis</i>
Cedars	<i>Cedrus</i> spp.
Cypress	<i>Taxodium</i> spp.
Fir, Douglas	<i>Pseudotsuga menziesii</i>
Firs	<i>Abies</i> spp.
Hemlock, Canadian/Eastern	<i>Tsuga canadensis</i>
Hemlock, Western	<i>Tsuga heterophylla</i>
Pines	<i>Pinus</i> spp.
Spruces	<i>Picea</i> spp.
Yew	<i>Taxus</i> spp.

## NON-CROP OR NON-PLANTED AREAS

The following areas are considered non-crop or non-planted areas: rights-of-way including railroads, highways, roads, dividers, medians, pipelines, public utility lines, pumping stations, transformer stations and substations. Around airports, electric utilities, commercial buildings, manufacturing plants, storage yards, rail yards, fence lines, parkways, and post-harvest croplands. Also beneath greenhouse benches and around golf courses.

ANNUAL GRASSES (EXCEPT FOR IN ESTABLISHED ALFALFA AND MINT)				
GRASS SPECIES	SCIENTIFIC NAME	WEED HEIGHT* (inches)	RATE FL. OZ./ ACRE	HIGH RATE <sup>(1)</sup>
Barnyardgrass	<i>Echinochloa crus-galli</i>	2 to 8	6	8
Broadleaf Signalgrass	<i>Brachiaria platyphylla</i>	2 to 6	6	8
Brome				
California	<i>Bromus carinatus</i>	2 to 6	6	8
Cheat	<i>Bromus secalinus</i>	2 to 6	6	8
Downy	<i>Bromus tectorum</i>	2 to 6	6	8
Ripgut	<i>Bromus diandrus</i>	2 to 6	6	8
Canarygrass	<i>Phalaris canariensis</i>	1 to 4	6	8
Crabgrass				
Hairy	<i>Digitaria adscendens</i>	2 to 6**	6	8
Large	<i>Digitaria sanguinalis</i>	2 to 6**	6	8
Smooth	<i>Digitaria ischaemum</i>	2 to 6**	6	8
Southern	<i>Digitaria ciliaris</i>	2 to 6**	6	8
Crowfootgrass	<i>Dactyloctenium aegyptium</i>	2 to 6**	6	8
Fall Panicum	<i>Panicum dichotomiflorum</i>	2 to 8	6	8
Field Sandbur	<i>Cenchrus incertus</i>	2 to 6	6	8
Foxtail				
Giant	<i>Setaria faberi</i>	2 to 12	6	8
Green	<i>Setaria viridis</i>	2 to 8	6	8
Yellow	<i>Setaria glauc</i>	2 to 8	6	8
Goosegrass	<i>Eleusine indica</i>	2 to 6**	6	8
Itchgrass	<i>Rottboellia cochinchinensis</i>	2 to 6	6	8
Junglerice	<i>Echinochloa colona</i>	2 to 6	6	8
Lovegrass (Stinkgrass)	<i>Eragrostis cilianensis</i>	2 to 6	6	8
Rabbitsfootgrass	<i>Polypogon monspeliensis</i>	1 to 4	6	8
Red Rice	<i>Oryza sativa</i>	1 to 3	6	8
Ryegrass				
Hardy	<i>Lolium remotum</i>	2 to 6	6	8
Italian	<i>Lolium multiflorum</i>	2 to 6	6	8
Seedling Johnsongrass	<i>Sorghum halepense</i>	4 to 10	6	8
Shattercane	<i>Sorghum bicolor</i>	6 to 18	6	8
Southwestern Cupgrass	<i>Eriochloa gracilis</i>	2 to 6	6	8

continued

**ANNUAL GRASSES**  
(EXCEPT FOR IN ESTABLISHED ALFALFA AND MINT) (continued)

GRASS SPECIES	SCIENTIFIC NAME	WEED HEIGHT (inches)*	RATE FL. OZ./ ACRE	HIGH RATE <sup>(1)</sup>
Sprangle top				
Amazon	<i>Leptochloa panicoides</i>	2 to 6	6	8
Bearded	<i>Leptochloa fascicularis</i>	2 to 6	6	8
Mexican	<i>Leptochloa uninervia</i>	2 to 6	6	8
Red	<i>Leptochloa filiformis</i>	2 to 6	6	8
Texas Panicum	<i>Panicum texanum</i>	2 to 6	6	8
Volunteer Cereals <sup>(2)</sup>				
Barley	<i>Hordeum vulgare</i>	2 to 6	6	8
Oats	<i>Avena sativa</i>	2 to 6	6	8
Rye	<i>Secale cereale</i>	2 to 6	6	8
Wheat	<i>Triticum aestivum</i>	2 to 6	6	8
Volunteer Corn <sup>(3)</sup>	<i>Zea mays</i>	4 to 12	4	6
Volunteer Corn <sup>(3)</sup>	<i>Zea mays</i>	12 to 24	6	8
Volunteer Corn (S.R.) <sup>(4)</sup>	<i>Zea mays</i>	4 to 12	8 (suppression only)	
Volunteer Grain Sorghum	<i>Sorghum bicolor</i>	8 to 12	6	8
Wild Oats	<i>Avena fatua</i>	2 to 6	6	8
Wild Proso Millet	<i>Panicum miliaceum</i>	2 to 10	6	8
Witchgrass	<i>Panicum capillare</i>	2 to 8	6	8
Woolly Cupgrass	<i>Eriochloa villosa</i>	2 to 8	6	8

- Apply only to actively growing grasses at recommended weed heights.
- Apply when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.
- Use the high rate under heavy grass pressure and/or when grasses are at maximum height.
- Do not apply more than 8 fl. oz./A of CLETHODIM 2 EC per application to the following crops: asparagus, carrot, cranberry, cucurbits, flax, fruiting vegetables (except tomato), garden beets, green onion, head and stem brassica vegetables, herbs, hops, leaf petioles, leafy brassica greens, leafy greens, non-bearing food crops, root vegetables, safflower, sesame and strawberry. Do not apply more than 6 fl. oz./A of CLETHODIM 2 EC per application to canola or mustard seed.

\* Generally occurs between 3-leaf stage and tillering.

\*\* Length of lateral growth.

(1) Rates higher than 8 fl. oz./A may be applied in certain geographic areas, cropping situations, or environmental conditions, where experience has shown that higher rates are needed for satisfactory control of annual grasses. In these situations, rates from 8 to 16 fl. oz./A may be applied. Do not apply more than 8 fl. oz./A of CLETHODIM 2 EC per application to the following crops: asparagus, carrot, cranberry, cucurbits, flax, fruiting vegetables (except tomato), garden beet, green onion, head and stem brassica vegetables, herbs, hops, leaf petioles, leafy brassica greens, leafy greens, non-bearing food crops, root vegetables, safflower, sesame and strawberry. Do not apply more than 6 fl. oz./A of CLETHODIM 2 EC per application to canola or mustard seed.

(2) When a cereal grain crop (such as wheat) is interseeded for crop establishment or is planted as wind breaks aid crop establishment, the minimum CLETHODIM 2 EC use rate for control is 8 fl. oz./A.

(3) Includes Roundup Ready®, Liberty Link® and IMI-CORN® volunteer corn.

(4) Sethoxydim resistant volunteer corn.

**ANNUAL & PERENNIAL GRASS CONTROL  
IN ESTABLISHED ALFALFA AND MINT WITH CLETHODIM 2 EC**

GRASS SPECIES	WEED STAGE	RATE FL. OZ./ ACRE	HIGH RATE
Annual & Perennial Grasses Listed in Grass Table	See Table	10	16

**Mowing:** The best control of annual grasses can be achieved by applying CLETHODIM 2 EC before grass weeds are mowed. Once a grass is mowed it becomes tougher to control, as much of the available leaf surface has been removed. In areas without a killing frost, some annuals can over-winter after having been mowed multiple times. These grasses form large crowns and may contain many viable buds. These grasses, even though they may be an annual grass, may require repeated applications of CLETHODIM 2 EC for partial or complete control.

**Irrigated Alfalfa and Mint:** Irrigation practices can be very critical to the successful use of CLETHODIM 2 EC in established alfalfa and mint and may be necessary to initiate active growth of the weeds prior to application. Generally applications 2 to 4 days after an irrigation are most effective. Irrigation made shortly after application (2 days) can be effective, but more consistent grass control occurs when the irrigation is made before the application.

**Aerial Application:** Apply CLETHODIM 2 EC in a minimum of 10 GPA in established alfalfa and mint when applying by air.

**Annual Grass Control:** Apply CLETHODIM 2 EC at the grass sizes indicated in the Recommendation for Annual Grass Table and rates indicated. If a grass has been cut, apply CLETHODIM 2 EC after active growth has resumed and regrowth has reached the minimum height and before it reaches the maximum height indicated. Apply before the alfalfa/mint canopy covers the grasses and interferes with the spray coverage. Some annual grasses are spring- and summer-germinating plants, while others are fall-germinating plants, and the time they are actively growing and most susceptible to CLETHODIM 2 EC may vary from region to region. Also some annuals germinate over a extended period of time, and because control of small grasses is desired, applications after each weed flush may be required. As a general rule spray spring and summer-germinating grasses as early in the season as possible, after initial green-up. Spray fall-germinating weeds in the fall soon after they begin growing but before any damage is done due to frost. Late fall applications may be less effective due to environmental conditions, such as frost, slower plant growth, or the onset of flowering.

**Perennial Grass Control:** CLETHODIM 2 EC effectively controls perennial grasses such as bermudagrass, Johnsongrass, quackgrass, wirestem muhly, tall fescue, foxtail barley and orchardgrass. Due in part to lack of tillage, perennial grasses are more difficult to control in a perennial crop such as established alfalfa or mint. A program of repeated applications is usually necessary for best results. The best way to control perennial grasses is to do so in the year of stand establishment before rhizomes and stolons become large and difficult to kill.

Use the high rate under heavy grass pressure and/or when grasses are at or near maximum height.

Always add a crop oil concentrate at 1 qt./A by ground or 1% v/v (but not less than 1 pt./A) to the finished spray volume by air.

**ANNUAL BLUEGRASS CONTROL  
WITH CLETHODIM 2 EC**

<b>GRASS SPECIES</b>	<b>WEED STAGE</b>	<b>RATE FL. OZ./ ACRE</b>	<b>HIGH RATE</b>
Annual Bluegrass ( <i>Poa annua</i> )	to 4-leaf	6*	16
<ul style="list-style-type: none"> <li>• Apply under favorable soil moisture and humidity, which exists within a few days after rainfall or within 7 days after irrigation. Grass needs to be actively growing at time of application(s).</li> <li>• Apply at weed stage indicated on the label, as reduced control can be expected with more mature annual bluegrass.</li> <li>• Use the high rate under heavy grass pressure and/or when annual bluegrass is more mature.</li> <li>• Always add a crop oil concentrate at 1 qt./A by ground to the finished spray volume.</li> </ul>			
*Use a minimum of 10 fl. oz./A to control annual bluegrass in seedling and established alfalfa and mint.			



**DIRECTIONS FOR REDUCED RATE TO CONTROL  
SMALL ANNUAL GRASSES IN CANOLA, BEAN (DRY) & PEA (SHELLED) (INCLUDING  
SOYBEAN), EDIBLE PODDED LEGUME VEGETABLES, FLAX, MUSTARD SEED,  
BEAN & PEA (SUCCULENT SHELLED) AND SUGAR BEET  
(REDUCED RATE NOT FOR USE IN CALIFORNIA)**

GRASS SPECIES	SCIENTIFIC NAME	WEED HEIGHT (inches)	RATE FL.OZ/ ACRE <sup>(1)</sup>
Barnyardgrass	<i>Echinochloa crus-galli</i>	1 to 4	4
Broadleaf Signalgrass	<i>Brachiaria platyphylla</i>	1 to 4	5
<b>Crabgrass</b>			
Large	<i>Digitaria sanguinalis</i>	1 to 3*	4
Large	<i>Digitaria sanguinalis</i>	1 to 4*	5
Smooth	<i>Digitaria ischaemum</i>	1 to 3*	4
Smooth	<i>Digitaria ischaemum</i>	1 to 4*	5
Southern	<i>Digitaria ciliaris</i>	1 to 4*	5
Fall Panicum	<i>Panicum dichotomiflorum</i>	1 to 4	4
<b>Foxtail</b>			
Giant	<i>Setaria faberi</i>	1 to 4	4
Green	<i>Setaria viridis</i>	1 to 4	4
Millet	<i>Setaria italica</i>	1 to 4	5
Yellow	<i>Setaria glauca</i>	1 to 4	4
Seedling Johnsongrass	<i>Sorghum halepense</i>	1 to 6	5
Shattercane	<i>Sorghum bicolor</i>	4 to 10	4
Texas Panicum	<i>Panicum texanum</i>	1 to 4	5
<b>Volunteer Cereals</b>			
Barley	<i>Hordeum vulgare</i>	1 to 4	5
Oats	<i>Avena sativa</i>	1 to 4	5
Wheat	<i>Triticum aestivum</i>	1 to 4	5
Volunteer Corn**	<i>Zea mays</i>	4 to 12	4
Wild Proso Millet	<i>Panicum miliaceum</i>	1 to 6	4
Wild Oats	<i>Avena fatua</i>	1 to 4	5

- Apply only to actively growing grasses at recommended weed heights.
- Apply when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.
- Regrowth by tillering may occur if application is made when plants are stressed by lack of moisture, excessive moisture, low or high temperatures and/or under very low humidity.

\* Length of lateral growth

\*\* Not S.R. Corn

(1) Always add a crop oil concentrate at 1 qt./A by ground application to the finished spray volume.

PERENNIAL GRASSES			
GRASS SPECIES	WEED HEIGHT (Inches)	RATE FL. OZ./ ACRE	HIGH RATE
Bermudagrass ( <i>Cynodon dactylon</i> )			
First Application	3 (or up to 6" runners)	8	16
Repeat Application(s) (if regrowth occurs)	3 (or up to 6" runners)	8	16
Fescue, Tall ( <i>Festuca arundinacea</i> )			
First Application	4 to 8	8	16
Repeat Application(s) (if regrowth occurs)	4 to 8	8	16
Foxtail Barley ( <i>Hordeum jubatum</i> )			
First Application	2 to 6	8	16
Repeat Application(s) (if regrowth occurs)	2 to 6	8	16
Orchardgrass ( <i>Dactylis glomerata</i> )			
First Application	4 to 8	8	16
Repeat Application(s) (if regrowth occurs)	4 to 8	8	16
Quackgrass* ( <i>Elytrigia repens</i> )			
First Application	4 to 12	8	16
Repeat Application(s) (if regrowth occurs)	4 to 12	8	16
Rhizome Johnsongrass ( <i>Sorghum halepense</i> )			
First Application	12 to 24	8	16
Repeat Application(s) (if regrowth occurs)	6 to 18	6	8
Wirestem Muhly ( <i>Muhlenbergia frondosa</i> )			
First Application	4 to 8	8	16
Repeat Application(s) (if regrowth occurs)	4 to 8	8	16
Perennial Bluegrass*			
Roughstalk ( <i>Poa trivialis</i> )			
Kentucky ( <i>Poa prantensis</i> )			
First Application	2 to 4	8	16
Repeat Application(s) (if regrowth occurs)	2 to 4	8	16
Bentgrass* ( <i>Agrostis</i> spp.)			
First Application	2 to 4	-	16
Repeat Application(s) (if regrowth occurs)	2 to 4	-	16
<ul style="list-style-type: none"> <li>• Apply only to actively growing grasses at recommended weed heights.</li> <li>• Apply when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.</li> <li>• Use the high rate under heavy grass pressure and/or when grasses are at maximum height.</li> <li>• Do not apply more than 8 fl. oz./A of CLETHODIM 2 EC per application to the following crops: asparagus, carrot, cranberry, cucurbits, flax, fruiting vegetables (except tomato), garden beet, green onion, head &amp; stem brassica vegetables, herbs, hops, leaf petioles, leafy brassica greens, leafy greens, non-bearing food crops, root vegetables, safflower, sesame and strawberry. Do not apply more than 6 fl. oz./A of CLETHODIM 2 EC per application to canola or mustard seed.</li> </ul>			
<p>*Control of quackgrass, perennial bluegrass and bentgrass with CLETHODIM 2 EC may be enhanced by adding AMS at 2.5 to 4.0 lbs./A</p>			

## TANK MIXES

### USE INFORMATION

The labels for each of the herbicides recommended for tank mixing with CLETHODIM 2 EC are unique to the characteristics of those products and contain restrictions and limitations that may be more restrictive than the CLETHODIM 2 EC label in certain considerations. Those concerns may include, but are not limited to:

1. Geographic restrictions - all products are not registered for use in all areas and rates may vary from one region of labeled use to another;
2. Crop rotation restrictions;
3. Applicator certification requirements;
4. Worker safety rules (e.g. protective clothing, reentry time, posting);
5. Soil type or soil characteristics (e.g. pH, OM);
6. Maximum dosage or number of applications per season;
7. Rain free period required; or
8. Application timing (e.g. pre-harvest interval)
9. Do not exceed the total season rates.

**THE MOST RESTRICTIVE LABELING OF ANY PRODUCT USED IN A TANK MIX MUST BE FOLLOWED.**

### TANK MIX APPLICATION OF CLETHODIM 2 EC AND BROADLEAF HERBICIDES FOR CONTROL OF GRASSES AND BROADLEAF WEEDS

- Apply only to actively growing grass and broadleaf weeds at recommended height or growth stage listed on each label.
- Apply when the first grass or broadleaf weed species in a mixed population reaches the recommended height or growth stage for treatment.
- Apply under favorable soil moisture and humidity that exist a few days after rainfall or within seven days after irrigation.
- Always add the appropriate adjuvant to the spray mix at the rate recommended for each specific tank mix combination.
- Tank mix applications may sometimes result in reduced grass control and possible increases in crop injury as compared to either product used alone. If regrowth occurs, or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC, as specified in the respective size and rate tables.
- Do not tank mix CLETHODIM 2 EC when broadleaf weeds are tall and/or dense enough to prevent proper grass coverage.

### MIXING INSTRUCTIONS

1. Fill clean spray tank 1/2 to 2/3 of desired level with clean water.
2. While agitating, add the correct amount of CLETHODIM 2 EC. Agitation should create a rippling or rolling action on the water surface.
3. If tank mixing CLETHODIM 2 EC with other labeled herbicides, add water soluble bags first, followed by dry formulations, flowables, emulsifiable concentrates, and then solutions. Prepare no more spray mixture than is required for the immediate spray operation.
4. Add any required adjuvants (crop oil concentrate, non-ionic surfactant and/or nitrogen solution).
5. Fill spray tank to desired level with water. **Agitation should continue until all spray solution has been applied.**

Failure to agitate the spray solution may result in improper mixing of the herbicides and unsatisfactory weed control. Mixing and compatibility qualities should be verified by a jar test.

## INFORMATION ON ANTAGONISM

Tank mixes of CLETHODIM 2 EC with postemergence broadleaf herbicides have shown some reduction or failure to control certain grass species which would have otherwise been controlled when CLETHODIM 2 EC is applied alone. Activity of the postemergence broadleaf herbicide in the tank mix is not affected.

## ALFALFA

**Table 1. CLETHODIM 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR ALFALFA**  
(Refer to the recommendation tables above for specific grasses and growth stages)

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM 2 EC + 2,4-DB <sup>(4)</sup>	10 to 16 fl. oz. + Refer to 2,4-DB label	10 to 16 fl. oz. + Refer to 2,4-DB label	1%	1%
CLETHODIM 2 EC + PURSUIT DG <sup>(5)</sup> or PURSUIT <sup>(5)</sup>	10 to 16 fl. oz. + 1.08 to 2.16 oz. or 3 to 6 fl. oz.	-	1%	1%
CLETHODIM 2 EC + BUCTRIL® 2L <sup>(6)</sup> or BUCTRIL GEL <sup>(6,7)</sup>	10 to 16 fl. oz. + 1.0 to 1.5 pts. or 0.5 to 0.75 pt.	-	0.5%	0.5%

(1) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

(2) Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

(3) Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

(4) CLETHODIM 2 EC plus 2,4-DB may increase the severity of crop injury when tank mixed. Alfalfa plants will generally outgrow this temporary crop injury within a few weeks.

(5) Before using this tank mix, read and understand the PURSUIT or PURSUIT DG labels for geographical restrictions and restrictions regarding alfalfa growth stage and type. Failure to do so can result in crop injury to alfalfa. Do not feed, graze, or harvest alfalfa for 30 days following an application of PURSUIT to alfalfa.

(6) In the states of Washington, Oregon, Idaho, Montana, Wyoming, Colorado, Utah, Nevada and the western halves of North Dakota, South Dakota, Nebraska, and Kansas: The CLETHODIM 2 EC plus BUCTRIL or BUCTRIL GEL tank mix must be applied in the fall or spring to seedling alfalfa when the majority of the field has a minimum of 2 trifoliates. Unacceptable crop injury may occur to alfalfa seedlings less than the 2 trifoliolate leaf stage. CLETHODIM 2 EC plus BUCTRIL or BUCTRIL GEL applications made when temperatures are expected to exceed 80°F at (and 3 days following) application can result in unacceptable crop injury. In the states not listed above, apply in the fall or spring to seedling alfalfa when the majority of the field has a minimum of 4 trifoliolate leaves. When alfalfa stand is uneven and conditions favor leaf burn, unacceptable crop injury may occur to alfalfa in the 2 trifoliolate or smaller stage of growth. CLETHODIM 2 EC plus BUCTRIL or BUCTRIL GEL applications made when temperatures are expected to exceed 70°F at (and 3 days following) application can result in unacceptable crop injury. Crop leaf burn can occur following CLETHODIM 2 EC plus BUCTRIL or BUCTRIL GEL application. Warm, humid conditions may enhance leaf burn. New crop growth will not be affected.

(7) Do not apply when alfalfa is under moisture, temperature, insect or disease stress or has been stressed by other pesticide carryover or application.

## CANOLA

**Table 2. REDUCED RATE CLETHODIM 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR CANOLA**

(Refer to the recommendation tables above for specific grasses and growth stages.)

PRODUCT	APPLICATION RATES/ACRE		AMMONIUM SULFATE	
	ANNUAL GRASSES <sup>(1)</sup>	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM 2 EC <sup>(2)</sup> + LIBERTY <sup>(3)</sup>	4 to 5 fl. oz. + 34 fl. oz.	-	3.0 lbs.	3.0 lbs.

(1) Annual grasses and sizes controlled with these tank mixtures are those that are identified in the DIRECTIONS FOR REDUCED RATE TO CONTROL SMALL ANNUAL GRASSES table.

(2) Do not apply Clethodim 2 EC tank mix during or after bolting or flowering or crop injury may occur.

(3) For use only on LibertyLink® canola

## COTTON

**Table 3. CLETHODIM 2 EC TANK MIXED WITH COBRA® AND MSMA APPLIED POST DIRECTED TO COTTON**

PRODUCT <sup>(1)</sup>	APPLICATION RATES/ACRE <sup>(2)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> V/V	COMMENTS
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	
CLETHODIM 2 EC <sup>(4)</sup> + COBRA + MSMA (4.0 lbs./gal.) or MSMA (6.6 lbs./gal.)	6 to 8 fl. oz.	8 to 16 fl. oz.	1%	Reduce broadcast rate in proportion to the band area actually treated.
	See COBRA label for rates to control broadleaf weeds and height limitations for cotton. Refer to the CLETHODIM 2 EC label for weed height and species controlled.			
	See MSMA label for rates to control broadleaf weeds and height limitations for cotton. Refer to the CLETHODIM 2 EC label for weed height and species controlled.			

(1) Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

(2) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

(3) Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

(4) If at the time of application, grass height is so tall that post-directed applications cannot get good coverage over the top of the grassy weeds, then poor control may result and a second (non-post directed) application of CLETHODIM 2 EC may be necessary.

## COTTON (continued)

**Table 4. CLETHODIM 2 EC TANK MIXED WITH BUCTRIL 4 EC TO CONTROL EMERGED WEEDS IN BXN COTTON AS A BROADCAST APPLICATION**

PRODUCT <sup>(1)</sup>	APPLICATION RATE/ACRE <sup>(2)</sup>	CROP OIL CONCENTRATE PER ACRE <sup>(3)</sup>	COMMENTS <sup>(7)</sup>
	ANNUAL GRASSES		
CLETHODIM 2 EC + BUCTRIL 4 EC <sup>(4,5,6)</sup>	8 to 16 fl. oz.  See BUCTRIL 4 EC label for rates to control broadleaf weeds and height limitations for cotton.	1 qt.	See charts for grasses controlled.

(1) Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage.

(2) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC at the recommended rate with the appropriate amount of crop oil concentrate in a non-BUCTRIL tank mix.

(3) Always add a crop oil concentrate at 1 qt./A by ground in the finished spray solution.

(4) Applications of BUCTRIL 4 EC can be made only to cotton that has been genetically modified for crop tolerance to postemergence over-the-top applications of bromoxynil.

(5) Do not apply the CLETHODIM 2 EC plus BUCTRIL tank mix within 75 days of harvest.

(6) Do not exceed 2 applications of BUCTRIL before cotton is 12 inches tall and one application after 12 inches tall.

(7) Use a minimum of 10 gals. of spray solution per acre.

**Table 5. CLETHODIM 2 EC TANK MIXED WITH GLYPHOSATE TO CONTROL EMERGED GRASSES IN COTTON AS A BROADCAST APPLICATION**

PRODUCT	APPLICATION RATE/ACRE <sup>(1)</sup>		ADJUVANT		COMMENTS
	ANNUAL GRASSES	PERENNIAL GRASSES	Glyphosate formulation with built in adjuvant	Glyphosate formulation without built in adjuvant	
CLETHODIM 2 EC + GLYPHOSATE	6 to 8 fl. oz.  See glyphosate label for rates to control broadleaf weeds and height limitations for cotton.	8 to 16 fl. oz.	Non-ionic surfactant @ 0.125 to 0.25% v/v plus ammonium sulfate @ 8.5 to 17 lbs. per 100 gals. of carrier	Crop oil concentrate @ 1 pt./A plus ammonium sulfate @ 8.5 to 17 lbs. per 100 gals. of carrier	See charts for grasses controlled.  Use a minimum of 10 gals. of spray solution per acre.

(1) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC at the recommended rate with the appropriate amount of crop oil concentrate.

## BEANS (DRY AND SUCCULENT SHELLED)

**Table 6. CLETHODIM 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR BEANS (DRY AND SUCCULENT SHELLED)**

(Refer to the recommendation tables above for specific grasses and growth stages.)

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM 2 EC + BASAGRAN®	8 to 10 fl. oz. + 1.0 to 2.0 pts.	10 to 16 fl. oz. + 1 to 2 pts.	1%	1%

(1) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

(2) Broadleaf weed control may be reduced when grass populations are tall enough or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

(3) Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

## FLAX

**Table 7. REDUCED RATE CLETHODIM 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR FLAX**

(Refer to the recommendation tables above for specific grasses and growth stages)

PRODUCT	APPLICATION RATES/ACRE		CROP OIL CONCENTRATE	
	ANNUAL GRASSES <sup>(1)</sup>	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM 2 EC + BRONATE ADVANCED™ <sup>(2, 3)</sup>	4 to 5 fl. oz. + 11.4 fl. oz.	-	1 pt.	1 pt.
CLETHODIM 2 EC + BRONATE® <sup>(2, 3)</sup>	4 to 5 fl. oz. + 0.9 pt.	-	1 pt.	1 pt.
CLETHODIM 2 EC + BUCTRIL <sup>(2, 3)</sup>	4 to 5 fl. oz. + 1.0 pt.	-	1 pt.	1 pt.
CLETHODIM 2 EC + RHONOX® <sup>(2, 3)</sup>	4 to 5 fl. oz. + 0.25 to 0.5 pt.	-	1 pt.	1 pt.

(1) Annual grasses and sizes controlled with these tank mixtures are those that are identified in the DIRECTIONS FOR REDUCED RATE TO CONTROL SMALL ANNUAL GRASSES table.

(2) Do not apply Clethodim 2 EC tank mix during or after the bud stage or to ornamental flax or crop injury may occur.

(3) Do not apply tank mixes if temperatures are expected to exceed 85°F at (or 3 days following) application or crop injury may occur.

## SOYBEAN

**Table 8. CLETHODIM 2 EC TANK MIXES<sup>(3)</sup> TO CONTROL ANNUAL GRASSES WHEN USED AS A BURNDOWN IN NO-TILL SOYBEAN**

PRODUCT	PRODUCT RATE/ACRE <sup>(1)</sup>	GRASS HEIGHT (inches)	CROP OIL CONCENTRATE /ACRE <sup>(2)</sup>	28%N OR 32%N QTS./A OR 2.5 TO 4.0 LBS. AMS
CLETHODIM 2 EC + 2,4-D ester <sup>(3)</sup>	3 fl. oz.	Foxtail 1 to 3 Fall Panicum 1 to 3	1 qt.	1 to 2 qts. or 2.5 to 4.0 lbs. AMS
	4 fl. oz.	Foxtail 1 to 4 Fall Panicum 1 to 4	1 qt.	1 to 2 qts. or 2.5 to 4.0 lbs. AMS
	6 to 8 fl. oz. + 0.5 lb. ai	(See Grass Chart for grasses claimed.)	1 qt.	1 to 2 qts. or 2.5 to 4.0 lbs. AMS

\*2,4-D ester should not be used where drift sensitive crops may be grown.

(1) If regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC according to the appropriate size and rate recommendations.

(2) Always use a crop oil concentrate at the listed rate in the finished spray volume.

(3) The following products can be tank mixed with CLETHODIM 2 EC plus 2,4-D ester: VALOR®, AUTHORITY® BROADLEAF, CANOPY XL®, DUAL® 8 E, DUAL II®, DUAL MAGNUM®, PROWL®, SENCOR®, SENCOR plus the DUAL products and TURBO®.

**Table 9. CLETHODIM 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR SOYBEAN (Refer to the recommendation tables above for specific grasses and growth stages.)**

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM 2 EC + COBRA	6 to 8 fl. oz. + 12.5 fl. oz.	8 to 16 fl. oz. + 12.5 fl. oz.	0.5 to 1%	1%
CLETHODIM 2 EC + BASAGRAN 4 SL	8 to 10 fl. oz. + 1 to 2 pts.	10 to 16 fl. oz. + 1 to 2 pts.	1%	1%
CLETHODIM 2 EC + Glyphosate (For use on Roundup Ready soybean only)	6 to 8 fl. oz. + 0.75 to 3.0 lb. ai	8 to 16 fl. oz. + 0.75 to 3.0 lb. ai	0.5 to 1% <sup>(4)</sup>	1% <sup>(4)</sup>
CLETHODIM 2 EC + ULTRA BLAZER®	6 to 8 fl. oz. + 1 to 1.5 pts.	6 to 8 fl. oz. + 1 to 1.5 pts.	0.5 to 1%	1%

continued



**Table 9. CLETHODIM 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR SOYBEAN**  
**(Refer to the recommendation tables above for specific grasses and growth stages.)**  
 (continued)

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM 2 EC + FLEXSTAR® HL <sup>(6)</sup>	6 to 8 fl. oz. Refer to the FLEXSTAR HL label for specific application rates.	8 to 16 fl. oz. Refer to the FLEXSTAR HL label for specific application rates.	1%	1%
CLETHODIM 2 EC + CLASSIC® 25 DG	8 to 10 fl. oz. + 0.5 to 0.75 oz.	10 to 16 fl. oz. + 0.5 to 0.75 oz.	1%	1%
CLETHODIM 2 EC <sup>(4)</sup> + PURSUIT® 70 DG	6 to 8 fl. oz. + 1.44 oz.	8 to 16 fl. oz. + 1.44 oz.	1%	1%
CLETHODIM 2 EC <sup>(5)</sup> + COBRA + CLASSIC 25 DG	8 to 10 fl. oz. + 6 to 8 fl. oz. + 0.5 to 0.75 oz.	-	0.5%	1%
CLETHODIM 2 EC <sup>(5)</sup> + COBRA + BASAGRAN 4 SL	8 to 10 fl. oz. + 6 to 10 fl. oz. + 1 to 1.5 pts.	-	0.5%	1%
CLETHODIM 2 EC <sup>(5)</sup> + COBRA + PURSUIT 70 DG	8 to 10 fl. oz. + 6 to 10 fl. oz. + 1.44 oz.	-	0.5%	1%
CLETHODIM 2 EC <sup>(5)</sup> + STORM®	8 to 10 fl. oz. + 1.5 pts.	-	0.5%	1%

continued

**Table 9. CLETHODIM 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR SOYBEAN**  
**(Refer to the recommendation tables above for specific grasses and growth stages.)**  
 (continued)

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM 2 EC <sup>(5)</sup> + RESOURCE® + PURSUIT 70 DG	8 to 10 fl. oz. + 4 fl. oz. + 1.44 oz.	-	1%	1%
CLETHODIM 2 EC <sup>(5)</sup> + RESOURCE + BASAGRAN	8 to 10 fl. oz. + 4 fl. oz. + 1 pt.	-	1%	1%
CLETHODIM 2 EC <sup>(5)</sup> + RESOURCE + CLASSIC	8 to 10 fl. oz. + 4 fl. oz. + 0.5 oz.	-	1%	1%
CLETHODIM 2 EC <sup>(5)</sup> + COBRA + RESOURCE	6 to 8 fl. oz. + 6 fl. oz. + 4 fl. oz.	-	0.5%	1%
CLETHODIM 2 EC <sup>(5)</sup> + FIRSTRATE®	6 to 8 fl. oz. + 0.3 oz.	8 to 16 fl. oz. + 0.3 oz.	1%	-
CLETHODIM 2 EC <sup>(5)</sup> + COBRA + FIRSTRATE	6 to 8 fl. oz. + 6 to 8 fl. oz. + 0.3 oz.	8 to 16 fl. oz. + 6 to 8 fl. oz. + 0.3 oz.	1%	-
CLETHODIM 2 EC <sup>(5)</sup> + RAPTOR® (1 AS)	6 to 8 fl. oz. + 4 to 5 fl. oz.	-	1%	-
CLETHODIM 2 EC <sup>(5)</sup> + COBRA + RAPTOR (1 AS)	6 to 8 fl. oz. + 6 to 8 fl. oz. + 4 to 5 fl. oz.	-	1%	-

continued

**Table 9. CLETHODIM 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR SOYBEAN**  
**(Refer to the recommendation tables above for specific grasses and growth stages.)**  
 (continued)

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM 2 EC <sup>(5)</sup> + SYNCHRONY® STS™	6 to 8 fl. oz. <sup>(7)</sup> + 0.5 oz./A	-	1 qt.	-
CLETHODIM 2 EC <sup>(5)</sup> + COBRA Herbicide + SYNCHRONY STS™	6 to 8 fl. oz. <sup>(7)</sup> + 4 to 8 fl. oz. + 0.5 oz.	-	1 pt.	-
CLETHODIM 2 EC <sup>(5)</sup> + RESOURCE	6 to 8 fl. oz. + 4 to 12 fl. oz.	-	1 qt.	-
CLETHODIM 2 EC <sup>(5)</sup> + FRONTROW™	8 to 10 fl. oz. + Refer to FRONTROW label for use rates.	-	1%	-
CLETHODIM 2 EC + FIRSTRATE + FLEXSTAR HL <sup>(5)</sup>	6 to 8 fl. oz. + 0.3 oz. + Refer to the FLEXSTAR HL label for specific application rates.	8 to 16 fl. oz. + 0.3 oz. + Refer to the FLEXSTAR HL label for specific application rates.	1%	-

- (1) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.
- (2) Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.
- (3) Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.
- (4) The addition of 2.5 lb. of ammonium sulfate is required when CLETHODIM 2 EC is tank mixed with glyphosate. If the glyphosate formulation has a stand alone built in adjuvant, add 0.125% v/v non-ionic surfactant in place of crop oil concentrate. If the glyphosate formulation does not have a built in adjuvant system, add 0.5 to 1% crop oil concentrate for ground application and 1% v/v for aerial application.
- (5) The addition of 1 to 2 qts./A of liquid fertilizer (10-34-0, 28%N, or 32%N) is recommended when CLETHODIM 2 EC is tank mixed with PURSUIT, RESOURCE, STORM, FIRSTRATE, SYNCHRONY, RAPTOR, FRONTROW, COBRA plus CLASSIC, COBRA plus BASAGRAN, COBRA plus PURSUIT, COBRA plus FIRSTRATE, COBRA plus SYNCHRONY, and COBRA plus RAPTOR. An equivalent amount (2.5 to 4.0 lbs./A) of spray grade ammonium sulfate (AMS) may be added in place of liquid fertilizer. Fertilizer adjuvants are to be added in addition to the crop oil concentrate.
- (6) Refer to FLEXSTAR HL label for geographic and rotational restrictions.
- (7) Annual grasses and sizes controlled with these tank mixtures are those that are identified in the **DIRECTIONS FOR REDUCED RATE TO CONTROL SMALL ANNUAL GRASSES** table.

## SOYBEAN (continued)

**Table 10. REDUCED RATE CLETHODIM 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR SOYBEAN** (Refer to table for reduced rate use in canola, dry shelled bean & pea, edible podded legume vegetables, flax, mustard seed, soybean, succulent bean & pea and sugar beet recommendations for small annual grasses for specific grasses and growth stages)

PRODUCT	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3,4)</sup> (V/V)	
	ANNUAL GRASSES <sup>(2)</sup>	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM 2 EC + FIRSTRATE	4 to 8 fl. oz. + 0.3 oz.	-	1%	1%
CLETHODIM 2 EC + PURSUIT 70 DG	4 to 6 fl. oz. + 1.44 oz.	-	1%	1%

(1) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

(2) Annual grasses and sizes controlled with these tank mixtures are those that are identified in the DIRECTIONS FOR REDUCED RATE TO CONTROL SMALL ANNUAL GRASSES table.

(3) Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

(4) The addition of 1 to 2 qts./A of liquid fertilizer (10-34-0, 28%N, or 32%N) is required when CLETHODIM 2 EC is tank mixed at reduce rates. An equivalent amount (2.5 to 4.0 lbs./A) of spray grade ammonium sulfate (AMS) may be added in place of liquid fertilizer. Fertilizer adjuvants are to be added in addition to the crop oil concentrate.

## PEANUT (INCLUDING PERENNIAL)

**Table 11. CLETHODIM 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR PEANUT (INCLUDING PEANUT)**

(Refer to the recommendation tables above for specific grasses and growth stages.)

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
	ANNUAL GRASSES <sup>(2)</sup>	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM 2 EC + BASAGRAN	8 to 10 fl. oz. + 1.0 to 2.0 pts.	-	1%	1%
CLETHODIM 2 EC + ULTRA BLAZER	8 to 10 fl. oz. + 0.5 to 1.5 pts.	-	1%	1%
CLETHODIM 2 EC + STORM	8 to 10 fl. oz. + 1.5 pts.	-	1%	1%

(1) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

(2) Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

(3) Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

GRASS SUPPRESSION FOR HARVEST EFFICIENCY IN PEANUT (INCLUDING PERENNIAL) WITH CLETHODIM 2 EC			
GRASS SPECIES	WEED STAGE	RATE FL. OZ./ ACRE	HIGH RATE
Annual and perennial grasses that exceed height claimed for control on height charts "ANNUAL GRASSES" & "PERENNIAL GRASSES"	Up to and including grasses in the seed head stage.	16	32
<ul style="list-style-type: none"> <li>Do not apply as part of a tank mix when applying CLETHODIM 2 EC for grass suppression.</li> <li>Add a crop oil concentrate at 1 qt./A by ground to the finished spray volume.</li> </ul>			

## SUGAR BEET

**Table 12. CLETHODIM 2 EC TANK MIXED WITH STINGER® APPLIED TO SUGAR BEET**  
(Refer to the recommendation tables above for specific grasses and growth stages)

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
	Annual Grasses	Perennial Grasses	Ground	Air
	CLETHODIM 2 EC + STINGER	6 to 8 fl. oz.	8 to 16 fl. oz.	1%
	See STINGER label for rates.			

(1) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

(2) Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

(3) Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

**Table 13. CLETHODIM 2 EC TANK MIXED WITH BETAMIX® or BETANEX® APPLIED TO SUGAR BEET**

PRODUCT <sup>(1)</sup>	WEEDS CONTROLLED		WEED HEIGHT (inches)	APPLICATION RATE/ACRE <sup>(2)</sup>
	COMMON NAME	SCIENTIFIC NAME		
CLETHODIM 2 EC <sup>(3)</sup> + BETAMIX or BETANEX	Barnyardgrass	<i>Echinochloa crus-galli</i>	1 to 3	8 fl. oz.
	Foxtail	<i>Setaria</i> spp.	1 to 3	
	Foxtail Millet	<i>Setaria italica</i>	1 to 3	
	Wild Oat	<i>Avena fatua</i>	1 to 3	
	Wild Proso Millet	<i>Panicum miliaceum</i>	1 to 3	
				See BETAMIX label for rates to control broadleaf weeds. <b>No additives are recommended in the tank mix.</b>
			See BETANEX label for rates to control broadleaf weeds. <b>No additives are recommended in the tank mix.</b>	

(1) Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

(2) Do not use crop oil concentrate. No additives are recommended in the tank mix. If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

(3) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC at full label rate with appropriate rate of crop oil concentrate.

**TABLE 14. CLETHODIM 2 EC PLUS BETANEX OR BETAMIX TANK MIX FOR THREE SEQUENTIAL APPLICATIONS FOR ANNUAL GRASS CONTROL (MICRO-RATE APPLICATION)**

PRODUCT	APPLICATION RATES/ACRE <sup>(1)</sup>		METHYLATED SEED OIL <sup>(2)</sup> (V/V)	
	ANNUAL GRASSES	GRASSES CONTROLLED (inches)		
			GROUND	AIR
CLETHODIM 2 EC + BETANEX or BETAMIX	2 to 3 fl. oz.	Green Foxtail (1-2)	1.5%	1.5%
	+	Yellow Foxtail (1-2)		
	8 to 12 fl. oz. <sup>(3)</sup>	Barnyardgrass (1-2)		
	or	Wild Oat (1-2)		
	8 to 12 fl. oz. <sup>(3)</sup>	Volunteer Cereals (1-2)		

(1) Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

(2) Always use a methylated seed oil at the listed rate (but not less than 1 pt./A) in the finished spray volume.

(3) Use 8 fl. oz./A rate when sugar beet are in the cotyledon to 4 leaf stage. Rate can be increased up to 12 fl. oz./A when the smallest sugar beet plants in the field are in the 4 true leaf stage or larger.

#### **Micro-Rate Applications to Sugar Beet Use Information**

Multiple micro-rate applications of CLETHODIM 2 EC in tank mixtures with reduced rates of BETANEX or BETAMIX and methylated seed oils may be applied by air or ground equipment to sugar beet to control early germinating annual grasses listed above. The rate of BETANEX or BETAMIX must not exceed 0.12 lb. ai./A (broadcast application) when in combination with these spray adjuvants. Note that maximum rate allowed varies depending on crop growth stage. The use of wetting agents or spray adjuvants with conventional rates (0.73 to 1.22 lb. ai./A) or multiple low rate (0.24 to 0.73 lb. ai./A) applications of BETANEX or BETAMIX is prohibited on the BETANEX

and BETAMIX master label. Favorable climatic conditions (good conditions for plant growth and development) are essential for adequate weed control. All use precautions and restrictions on the BETANEX and BETAMIX master labels must be followed.

#### **Micro-Rate Multiple Applications of CLETHODIM 2 EC Tank Mixes**

Apply CLETHODIM 2 EC in broadcast applications only at a rate of 2 to 3 fl. oz./A in tank mixture with either BETANEX or BETAMIX following the directions for use on the tank mix partner label. A minimum of three sequential applications of 2 fl. oz./A or a minimum of 2 sequential applications of 3 fl. oz./A should be utilized for CLETHODIM 2 EC tank mixtures. A minimum of 3 sequential applications of BETAMIX or BETANEX should be used. Accurate timing is essential; make initial application immediately after weeds emerge, and make repeat applications on 5 to 7 day intervals. If weed control is not adequate due to climatic conditions, spray coverage or other factors, return to conventional application rates of CLETHODIM 2 EC (6 to 8 fl. oz./A) and add rates of BETANEX or BETAMIX as directed on their label. When using conventional rates of BETANEX or BETAMIX in tank mixtures with CLETHODIM 2 EC, a spray adjuvant is not recommended.

#### **Use Precautions for Micro-Rate Applications: (See CLETHODIM 2 EC, BETANEX and BETAMIX master label for further use precautions.)**

Not all weeds will be adequately controlled, even with favorable climatic conditions. Conventional rates of CLETHODIM 2 EC, BETANEX or BETAMIX and/or hand labor may be required if multiple micro-rate applications do not adequately control weeds. Plugging of spray nozzles may be encountered due to the potential for formation of a precipitate in the spray solution that is often associated with micro-rate applications. J. Oliver Products, LLC will not be responsible for any nozzle plugging that may occur with the use of multiple micro-rate applications. Methylated seed oils must not be added if the BETANEX or BETAMIX rate exceeds 0.12 lb. ai/A broadcast, as the addition of methylated seed oils could increase the possibility of crop injury at dosage rates greater than 0.12 lb. ai/A.

#### **GROUND APPLICATION**

Use of sufficient spray volumes and pressure is essential to ensure complete coverage. Use a minimum of 10 gals. and a maximum of 20 gals. of spray solution per acre. Spray pressures should reflect a minimum of 30 psi and a maximum of 60 psi at the nozzle. Do not use flood nozzles.

#### **AERIAL APPLICATION**

Use of sufficient spray volumes is essential to ensure complete coverage. Use a minimum of 5 gals. and a maximum of 15 gals. of spray solution per acre.

**Table 15. TANK MIX APPLICATION OF CLETHODIM 2 EC AND FUNGICIDES FOR CONTROL OF GRASS WEEDS AND DISEASES IN SUGAR BEET**

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)
	ANNUAL GRASSES	PERENNIAL GRASSES	
CLETHODIM 2 EC + EMINENT®	6 to 8 fl. oz. + 13 fl. oz.	8 to 16 fl. oz. + 13 fl. oz.	1%
(1) If grass regrowth occurs, or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC alone (without a tank mix fungicide) according to the appropriate size and rate recommendations.			
(2) Refer to CLETHODIM 2 EC and fungicide label for rates and weeds and diseases controlled.			
(3) Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.			

**Table 16. TANK MIX APPLICATION OF CLETHODIM 2 EC AND INSECTICIDES FOR CONTROL OF GRASS WEEDS AND INSECTS IN ALFALFA, COTTON, MINT, PEANUT (INCLUDING PERENNIAL), SOYBEAN AND SUNFLOWER**

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE (V/V) <sup>(3)</sup>	CROP					
	ANNUAL GRASSES	PERENNIAL GRASSES		Alfalfa <sup>(4)</sup>	Cotton	Mint <sup>(4,5)</sup>	Peanut	Soybean	Sunflower
CLETHODIM 2 EC + ORTHENE® 75 S or ORTHENE 97	6 to 8 fl. oz. + 0.33 to 1.33 lbs.  0.25 to 1.0 lb.	8 to 16 fl. oz. + 0.33 to 1.33 lbs.  0.25 to 1.0 lb.	1%		X	X	X		
CLETHODIM 2 EC + ORTHENE 90 S <sup>(6)</sup>	6 to 8 fl. oz. + 0.25 to 1 lb.	8 to 16 fl. oz. + 0.25 to 1 lb.	1%		X	X	X	X	
CLETHODIM 2 EC + DANITOL® 2.4 EC	6 to 8 fl. oz. + 10 2/3 to 16 fl. oz.	8 to 16 fl. oz. + 10 2/3 to 16 fl. oz.	1%		X		X		
CLETHODIM 2 EC + ASANA XL®	6 to 8 fl. oz. + Refer to ASANA XL label	8 to 16 fl. oz. + Refer to ASANA XL label	1%						X
CLETHODIM 2 EC + WARRIOR®	6 to 8 fl. oz. + Refer to WARRIOR label	8 to 16 fl. oz. + Refer to WARRIOR label	1%						X
CLETHODIM 2 EC + WARRIOR	10 to 16 fl. oz. <sup>(7)</sup> + Refer to WARRIOR label	10 to 16 fl. oz. + Refer to WARRIOR label	1%	X					
CLETHODIM 2 EC + BAYTHROID®	10 to 16 fl. oz. <sup>(7)</sup> + Refer to BAYTHROID label	10 to 16 fl. oz. + Refer to BAYTHROID label	1%	X					
CLETHODIM 2 EC + DIMETHOATE®	10 to 16 fl. oz. <sup>(7)</sup> + Refer to DIMETHOATE label	10 to 16 fl. oz. + Refer to DIMETHOATE label	1%	X					

continued



**Table 16. TANK MIX APPLICATION OF CLETHODIM 2 EC AND INSECTICIDES FOR CONTROL OF GRASS WEEDS AND INSECTS IN ALFALFA, COTTON, MINT, PEANUTS (INCLUDING PERENNIAL), SOYBEAN AND SUNFLOWER (continued)**

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE (V/V) <sup>(3)</sup>	CROP					
	ANNUAL GRASSES	PERENNIAL GRASSES		Alfalfa <sup>(4)</sup>	Cotton	Mint <sup>(4,5)</sup>	Peanut	Soybean	Sunflower
CLETHODIM 2 EC + LORSBAN®	10 to 16 fl. oz. <sup>(7)</sup> + Refer to LORSBAN label	10 to 16 fl. oz. + Refer to LORSBAN label	1 to 2 pt. <sup>(8)</sup>	X					
CLETHODIM 2 EC + POUNCE®	10 to 16 fl. oz. <sup>(7)</sup> + Refer to POUNCE label	10 to 16 fl. oz. + Refer to POUNCE label	1%	X					

(1) If grass regrowth occurs, or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC a (without a tank mix insecticide) according to the appropriate size and rate recommendations.

(2) Refer to CLETHODIM 2 EC and insecticide label for rates and weeds and insects controlled.

(3) Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

(4) Certain insecticides may cause temporary phytotoxic symptoms on alfalfa and mint foliage. Refer to the insecticide label for information. It is suggested that prior to using any of these insecticide/herbicide tank mixtures, that a small area of the field be first and observations for crop injury be made prior to treating the whole field.

(5) The CLETHODIM 2 EC rate should be 6 to 8 fl. oz./A for annual grass control in baby mint, minimum of 8 fl. oz./A for annual control in established mint and 8 to 16 fl. oz./A for perennial grass control. Crop oil concentrate should be added at the rate of 2.0 pts./A.

(6) Insecticide tank mix use with ORTHENE 90 S in soybean is permitted only in a state having an approved Section 24(c) reg for ORTHENE 90 S use in soybean.

(7) The CLETHODIM 2 EC rate should be 6 to 8 fl. oz./A for annual grass control in seedling alfalfa.

(8) For the CLETHODIM 2 EC plus LORSBAN tank mix, reduce the adjuvant rate down to 1.0 pt./A when the LORSBAN rate pt./A or higher.

**Table 17. ROUNDUP READY VOLUNTEER CORN CONTROL IN ROUNDUP READY SOYBEAN WITH CLETHODIM 2 EC HERBICIDE TANK MIX**

Roundup Ready Volunteer Corn Height (inches)	CLETHODIM 2 EC Rate fl. oz./A	Glyphosate <sup>(1)</sup> rate for formulations with built in adjuvant	Adjuvant
<12	4	1.0 to 2.0 lb. ai./A (Approximately equivalent to 22 to 44 fl. oz./A of ROUNDUP Weather MAX)	Non-ionic surfactant @ 0.125 to 0.25% v/v plus ammonium sulfate @ 8.5 to 17 lbs. per 100 gals./ of carrier
12 to 18	5		
18 to 24	6		

Roundup Ready Volunteer Corn Height (inches)	CLETHODIM 2 EC Rate fl. oz./A	Glyphosate <sup>(1)</sup> rate for formulations without built in adjuvant	Adjuvant
<12	4	Up to 2.0 lb. ai./A (Equivalent to 32 to 64 fl. oz./A of ROUNDUP Original)	Crop oil concentrate @ 1 pt./A plus ammonium sulfate @ 8.5 to 17 lbs. per 100 gals. of carrier
12 to 18	5		
18 to 24	6		

(1) Glyphosate formulation must be labeled for use on Roundup Ready soybean.

**THE MOST RESTRICTIVE LABELING OF ANY PRODUCT USED IN A TANK MIX MUST BE FOLLOWED.**

- Apply only to actively growing grass and broadleaf weeds at recommended height or growth stage listed on each label.
- Apply under favorable soil moisture and humidity which exist a few days after rainfall or within seven days after irrigation.
- Tank mix applications may sometimes result in reduced grass control. If regrowth occurs, or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC, as specified in the respective size and rate tables.
- Do not tank mix CLETHODIM 2 EC when broadleaf weeds are tall and/or dense enough to prevent proper grass coverage.
- This tank mix may be applied postemergence to ROUNDUP READY soybean up through the full flowering stage. Do not apply less than 60 days before harvest.
- Avoid contact with foliage, green stems, or fruit crops, or any desirable plants and trees, other than soybean with the ROUNDUP READY gene as severe injury or destruction will result.
- Do not allow the CLETHODIM 2 EC plus ROUNDUP to mist, drip, drift or splash onto desirable vegetation as minute quantities of the tank mix can cause severe damage or destruction to the crops, plants or other areas on which treatment was not intended. The likelihood of injury occurring from drift of this product is greatest when winds are gusty or in excess of 5 miles per hour. Even under lesser wind velocities, avoid conditions that allow spray drift to occur such as combinations of spray pressure and nozzle type that will result in fine particles (mist) that are likely to drift.

**FALLOW LAND**

CLETHODIM 2 EC may be used to control annual and perennial grasses in land that has been left fallow the previous year and other non-producing agricultural areas. Apply CLETHODIM 2 EC at 6 to 8 fl. oz./A for annual grasses and 8 to 16 fl. oz./A for perennial grasses. When both grass and broadleaf weeds are the target pest, CLETHODIM 2 EC may be tank mixed with 2,4-D ester or BANVEL® SGF for broad spectrum control. When both annual and perennial grasses occur in the same field, use a minimum of 8 fl. oz./A. CLETHODIM 2 EC rate.

**USE INFORMATION:**

- Use a minimum spray volume of 5 gals./A for aerial applications and 15 gals./A for ground applications.
- Apply only to actively growing grasses when the first grass reaches the recommended weed height as specified by the Recommendations for Annual and Perennial Grasses section of this label.
- Annual grasses that emerge after the CLETHODIM 2 EC application will not be controlled, and a second application may be necessary.
- The control of perennial grasses may require more than 1 application in non-tilled areas.
- Do not plant any crop for 30 days after application unless clethodim is registered for use in that crop.
- Do not apply to grasses that have tillered, formed seedheads or exceeded recommended growth stage.
- Do not use flood jet nozzles.
- Do not apply to drought stressed grasses.
- Do not mow area for 2 weeks prior to or after the CLETHODIM 2 EC application.

**TABLE 18. CLETHODIM 2 EC IN TANK MIXES TO CONTROL ANNUAL AND PERENNIAL GRASSES IN FALLOW LAND**

PRODUCT	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(2)</sup> (V/V)	
	Annual Grasses	Perennial Grasses	Ground	Air
CLETHODIM 2 EC + 2,4-D ester or BANVEL SGF	6 to 8 fl. oz. + 0.5 lb./A or See BANVEL SGF label for rates	8 to 16 fl. oz.	1%	1%
<p>(1) Refer to CLETHODIM 2 EC label for weed height and species control. Review BANVEL SGF and 2,4-D labels for crop restrictions, use rates and weeds controlled.</p> <p>(2) Always use a crop oil concentrate or methylated seed oil containing at least 15% emulsifier at the listed rate (but not less than 1 pt./A) in the finished spray volume.</p>				

GRASS SUPPRESSION IN NON-CROP AREAS WITH CLETHODIM 2 EC			
GRASS SPECIES	WEED STAGE	RATE FL. OZ./ ACRE	HIGH RATE
Annual and perennial grasses that exceed height claimed for control on height chart above.	Up to and including grasses in the seed head stage.	12	16
<ul style="list-style-type: none"> <li>Do not apply as part of a tank mix when applying CLETHODIM 2 EC for grass suppression.</li> <li>Add a crop oil concentrate at 1 qt./A by ground to the finished spray volume.</li> </ul>			

**TABLE 19. CLETHODIM 2 EC FOR THE CONTROL AND/OR SUPPRESSION OF TALL FESCUE IN NATIVE PRAIRIE WARM-SEASON GRASS RESTORATION PROJECTS**

PRODUCT	PRODUCT RATES	GRASS WEEDS CONTROLLED/SUPPRESSED		WEED STAGES
		Common Name	Scientific Name	
CLETHODIM 2 EC	10 to 12 fl. oz./A	Tall Fescue	<i>Festuca arundinacea</i>	4 to 6 inches tall (40 to 60% green-up)
<p><b>Adjuvant:</b> CLETHODIM 2 EC must be applied with crop oil concentrate at 1 qt./A, plus a spray grade ammonium sulfate at 2.5 to 4 lbs./A. Recommended Mixing Order: Thoroughly mix spray grade ammonium sulfate in water, add CLETHODIM 2 EC, then add crop oil concentrate.</p>				

**SPECIAL APPLICATION INSTRUCTIONS/PRECAUTIONS:**

- Burn or mow fields a minimum of 3 weeks prior to application to remove excess crop residue. Apply in the spring, at 40 to 60% tall fescue green-up, prior to emergence of warm-season grasses. Do not mow area for 2 weeks after the CLETHODIM 2 EC application.
- Apply in a minimum of 15 to 20 gals. of water per acre at a spray pressure of 40 to 60 PSI at the nozzle.
- Apply using flat fan or hollow cone nozzles. Do not use flood jet nozzles.
- Apply only to fields that have warm-season grasses established for 2 years. Applications of CLETHODIM 2 EC to emerged warm-season grasses may cause injury. Do not apply to warm-season grasses grown for seed.
- Do not graze treated fields or feed treated forage and or hay to livestock. Do not plant any crop for 30 days after application, unless clethodim is registered for use in that crop.

**NOTE:** CLETHODIM 2 EC applications are most effective if applied when average nighttime temperatures are consistently greater than or equal to 47°F.

**TABLE 20. CLETHODIM 2 EC FOR THE SUPPRESSION OF TALL FESCUE SEED-HEADS IN NON-PRODUCING AGRICULTURAL AREAS**

Product	Product Rate	Suppression	Application Timing
CLETHODIM 2 EC	1 1/2 to 2 fl. oz./A	Tall Fescue Seed-Heads ( <i>Festuca arundinacea</i> )	(50 to 90% Tall Fescue green-up)
<b>ADJUVANT:</b> CLETHODIM 2 EC must be applied with crop oil concentrate at 1 qt./A, plus a spray grade ammonium sulfate at 2.5 to 4 lb./A. <b>Recommended Mixing Order:</b> Thoroughly mix spray grade ammonium sulfate in water, add CLETHODIM 2 EC Herbicide, then add crop oil concentrate.			

**SPECIAL APPLICATION INSTRUCTIONS/PRECAUTIONS:**

- Apply at 50 to 90% tall fescue green-up.
- Use the higher CLETHODIM 2 EC rate if less tall fescue green matter is present.
- Do not mow area for two weeks after the CLETHODIM 2 EC application.
- Apply in a minimum of 15 to 20 gals. of water per acre at a spray pressure of 40 to 60 psi at the nozzle. Apply using flat fan or hollow cone nozzles. Do not use flood nozzles.
- 2,4-D ester maybe added to this tank mix for broadleaf control (see 2,4-D ester label for weeds controlled).
- Do not graze treated fields or feed treated forage and/or hay to livestock. Do not plant any crop for 30 days after application, unless clethodim is registered for use in that crop.

## ORNAMENTALS

For ornamental plant uses, CLETHODIM 2 EC can be used to control labeled grass weeds in greenhouses, lathhouses, shadehouses, and around outdoor ornamentals, including nurseries, parks, roadside plantings, and structure landscapes.

### IMPORTANT

CLETHODIM 2 EC successfully controls weeds in newly transplanted and established non-grassy ornamentals. Plant tolerance to CLETHODIM 2 EC at labeled rates has been found to be acceptable for the indicated genera and species listed below. Due to variability within species, crop growth stage, environmental conditions, and application techniques, it is recommended that the user determine if herbicide can be used safely on a few plants prior to widespread application. Neither the seller nor the manufacturer of CLETHODIM 2 EC have investigated the safety factor to ornamental plants not listed on the label.

The following plants have shown a tolerance for CLETHODIM 2 EC applications:

### ORNAMENTAL TREES

COMMON NAME	SCIENTIFIC NAME
Alder, Red	<i>Alnus rubra</i>
Ash	<i>Fraxinus</i> spp.
Basswood	<i>Tilia</i> spp.
Birch, European White	<i>Betula pendula</i>
Birch, River	<i>Betula nigra</i>
Birch, White	<i>Betula papyrifera</i>
Crabapple, Flowering	<i>Malus halliana</i>
Dogwood, Flowering	<i>Cornus florida</i>
Golden Chain Tree	<i>Laburnum anagyroides</i>
Maples	<i>Acer</i> spp.
Mulberry, White	<i>Morus alba</i>
Oaks	<i>Quercus</i> spp.
Olive, Wild	<i>Elaeagnus angustifolia</i>
Redbud, Eastern	<i>Cercis Canadensis</i>
Sweet Gum, American	<i>Liquidambar styraciflua</i>

### GROUND COVERS

COMMON NAME	SCIENTIFIC NAME
Bugleweed, Carpet	<i>Ajuga reptans</i>
Ivy, English	<i>Hedera helix</i>
Japanese Spurge	<i>Pachysandra terminalis</i>
Lilyturf	<i>Liriope muscari</i>
Moneywort	<i>Lysimachia nummularia</i>
Mondo Grass, White	<i>Ophiopogon jaburan</i>
Mondo Grass Dwarf	<i>Ophiopogon japonicus</i>
Periwinkle, Lesser	<i>Vinca minor</i>

## GARDEN FLOWERS AND PLANTS

COMMON NAME	SCIENTIFIC NAME
Ageratum	<i>Ageratum</i> spp.
Alyssum*, Sweet	<i>Lobularia maritima</i>
Asparagus Fern	<i>Asparagus setaceus</i>
Bleeding Heart	<i>Dicentra spectabilis</i>
Cast Iron Plant	<i>Aspidistra elatior</i>
Chrysanthemum	<i>Chrysanthemum</i> spp.
Cinquefoil	<i>Potentilla</i> spp.
Coleus	<i>Coleus</i> spp.
Coralbells	<i>Heuchera sanguinea</i>
Cranesbill	<i>Geranium</i> spp.
Dahlia	<i>Dahlia</i> spp.
Daisy, Trailing African	<i>Osteospermum fruticosum</i>
Daylily	<i>Hemerocallis</i> spp.
Dusty Miller	<i>Senecio cineraria</i>
Euonymus	<i>Euonymus</i> spp.
Gazania	<i>Gazania</i> spp.
Geranium, House	<i>Pelargonium hortorum</i>
Heather, False	<i>Cuphea hyssopifolia</i>
Hosta	<i>Hosta fortunei</i>
Iris	<i>Iris</i> spp.
Jasmine Tobacco	<i>Nicotiana glauca</i>
Loosestrife	<i>Lythrum salicaria</i>
Marigold	<i>Tagetes</i> spp.
Partridgeberry	<i>Mitchella repens</i>
Petunia*	<i>Petunia hybrida</i>
Phlox	<i>Phlox</i> spp.
Pinks	<i>Dianthus</i> spp.
Portulaca	<i>Portulaca grandiflora</i>
Salvia	<i>Salvia</i> spp.
Saxifrage	<i>Saxifraga</i> spp.
Sedum	<i>Sedum</i> spp.
Selloum	<i>Philodendron selloum</i>
Snapdragon*	<i>Antirrhinum majus</i>
Sweet Flag	<i>Acorus gramineus</i>
Tickseed	<i>Coreopsis grandiflora</i>
Touch-Me-Not	<i>Impatiens</i> spp.
Verbena	<i>Verbena</i> spp.
Violet	<i>Viola</i> spp.
Yarrow, Common	<i>Achillea millefolium</i>
Zinnia	<i>Zinnia elegans</i>
*Slight foliage or flower speckling has been observed on these species.	

## SHRUBS

COMMON NAME	SCIENTIFIC NAME
Abelia	<i>Abelia</i> spp.
Anise, Purple	<i>Illicium floridanum</i>
Aucuba	<i>Aucuba</i> spp.
Azalea*	<i>Rhododendron</i> spp.
Bamboo	<i>Bambusa</i> spp.
Barberry, Japanese	<i>Berberis thunbergii</i>
Barberry, Magellan	<i>Berberis buxifolia</i>
Bayberry	<i>Myrica pensylvanica</i>
Bottlebrush	<i>Callistemon citrinus</i>
Boxwood, Common	<i>Buxus sempervirens</i>
Camellia, Common	<i>Camellia japonica</i>
Candytuft	<i>Iberis sempervirens</i>
Cleyera	<i>Cleyera japonica</i>
Coralberry	<i>Ardisia crenata</i>
Crape Myrtle	<i>Lagerstroemia indica</i>
Coyote Brush	<i>Baccharis pilularis</i>
Fig, Creeping	<i>Ficus pumila</i>
Gardenia	<i>Gardenia</i> spp.
Holly	<i>Ilex</i> spp.
Honeysuckle	<i>Lonicera</i> spp.
Indian Hawthorn	<i>Raphiolepis indica</i>
Jasmine	<i>Jasminum</i> spp.
Jasmine, Asiatic	<i>Trachelospermum asiaticum</i>
Jasmine, Star	<i>Trachelospermum jasminoides</i>
Juniper	<i>Juniperus</i> spp.
Lantana	<i>Lantana</i> spp.
Nandina* Bamboo, Heavenly	<i>Nandinia domestica</i>
Oleander, Common	<i>Nerium oleander</i>
Oregon Grape	<i>Mahonia aquifolium</i>
Photinia	<i>Photinia</i> spp.
Pittosporum	<i>Pittosporum</i> spp.
Podocarpus	<i>Podocarpus</i> spp.
Privet	<i>Ligustrum</i> spp.
Pyracantha	<i>Pyracantha</i> spp.
Rhododendron	<i>Rhododendron</i> spp.
Rose	<i>Spiraea bumalda</i>
Sweet Olive	<i>Osmanthus fragrans</i>
Viburnum	<i>Viburnum tinus</i>
Wisteria	<i>Wisteria</i> spp.
Yellow Sage/Shrub Verbena	<i>Lantana camara</i>
*Slight foliage or flower speckling has been observed on these species.	

### ANNUAL GRASSES IN ORNAMENTALS

GRASS SPECIES	SCIENTIFIC NAME	WEED* HEIGHT INCHES	RATE FL. OZ./ACRE <sup>(1)</sup>	HIGH RATE <sup>(2)</sup>
Barnyardgrass	<i>Echinochloa crus-galli</i>	2 to 8	8	16
Broadleaf Signalgrass	<i>Bracharia platyphylla</i>	2 to 6	8	16
Brome				
California	<i>Bromus carinatus</i>	2 to 6	8	16
Cheat	<i>Bromus secalinus</i>	2 to 6	8	16
Downy	<i>Bromus tectorum</i>	2 to 6	8	16
Ripgut	<i>Bromus diandrus</i>	2 to 6	8	16
Canarygrass	<i>Phalaris canariensis</i>	1 to 4	8	16
Crabgrass				
Hairy	<i>Digitaria adscendens</i>	2 to 6**	8	16
Large	<i>Digitaria sanguinalis</i>	2 to 6**	8	16
Smooth	<i>Digitaria ischaemum</i>	2 to 6**	8	16
Southern	<i>Digitaria ciliaris</i>	2 to 6**	8	16
Crowfootgrass	<i>Dactyloctenium aegyptium</i>	2 to 6**	8	16
Fall Panicum	<i>Panicum dichotomiflorum</i>	2 to 8	8	16
Field Sandbur	<i>Cenchrus Incertus</i>	2 to 6	8	16
Foxtail				
Giant	<i>Setaria faberi</i>	2 to 12	8	16
Green	<i>Setaria viridis</i>	2 to 8	8	16
Yellow	<i>Setaria glauca</i>	2 to 8	8	16
Goosegrass	<i>Eleusine indica</i>	2 to 6**	8	16
Itchgrass	<i>Rottboellia cochlin</i>	2 to 6	8	16
Junglerice	<i>Echinochloa colona</i>	2 to 6	8	16
Lovegrass (Stinkgrass)	<i>Eragrostis cilianensis</i>	2 to 6	8	16
Rabbitsfootgrass	<i>Polypogon monspeliensis</i>	1 to 4	8	16
Red Rice	<i>Oryza sativa</i>	1 to 3	8	16
Rygrass				
Hardy	<i>Lolium remotum</i>	2 to 6	8	16
Italian	<i>Lolium multiflorum</i>	2 to 6	8	16
Seedling Johnsongrass	<i>Sorghum halepense</i>	4 to 10	8	16
Shattercane	<i>Sorghum bicolor</i>	6 to 18	8	16
Southwestern Cupgrass	<i>Eriochloa gracilis</i>	2 to 6	8	16
Sprangletop				
Amazon	<i>Leptochloa panicoides</i>	2 to 6	8	16
Bearded	<i>Leptochloa fascicularis</i>	2 to 6	8	16
Mexican	<i>Leptochloa uninervia</i>	2 to 6	8	16
Red	<i>Leptochloa filiformis</i>	2 to 6	8	16
Texas Panicum	<i>Panicum texanum</i>	2 to 6	8	16
Volunteer Cereals				
Barley	<i>Hordeum vulgare</i>	2 to 6	8	16
Oats	<i>Avena sativa</i>	2 to 6	8	16
Rye	<i>Secale cereale</i>	2 to 6	8	16
Wheat	<i>Triticum aestivum</i>	2 to 6	8	16
Volunteer Corn	<i>Zea mays</i>	4 to 12	6	8
Volunteer Corn	<i>Zea mays</i>	12 to 24	8	16
Volunteer Grain Sorghum	<i>Sorghum bicolor</i>	8 to 12	8	16
Wild Oats	<i>Avena fatua</i>	2 to 6	8	16
Wild Proso Millet	<i>Panicum miliaceum</i>	2 to 10	8	16
Witchgrass	<i>Panicum capillare</i>	2 to 8	8	16
Woolly Cupgrass	<i>Eriochloa villosa</i>	2 to 8	8	16

- Apply only to actively growing grasses at recommended weed heights.
- Apply when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.
- Use the high rate under heavy grass pressure and/or when grasses are at maximum height.

\*Generally occurs between 3-leaf stage and tillering.

\*\*Length of lateral growth.

(1) 8 fl. oz./A = approximately 0.2 fl. oz./1000 sq. ft.

(2) 16 fl. oz./A = approximately 0.4 fl. oz./1000 sq. ft.

Add a non-ionic surfactant containing at least 80% active ingredient at the rate of 1 pt. per 50 gals. (0.25% v/v).



ANNUAL BLUEGRASS CONTROL WITH CLETHODIM 2 EC IN ORNAMENTALS			
GRASS SPECIES	WEED STAGE	RATE FL. OZ./ ACRE	HIGH RATE
Annual Bluegrass ( <i>Poa annua</i> )	to 4-leaf	6	16
<ul style="list-style-type: none"> <li>• Apply under favorable soil moisture and humidity that exists within a few days after rainfall or within 7 days after irrigation. Grass needs to be actively growing at time of application(s).</li> <li>• Apply at weed stage indicated on the label, as reduced control can be expected with more mature annual bluegrass.</li> <li>• Use the high rate under heavy grass pressure and/or when annual bluegrass is more mature.</li> <li>• Add a non-ionic surfactant containing at least 80% active ingredient at the rate of 1 pt. per 50 gals. (0.25% v/v).</li> </ul>			

PERENNIAL GRASSES			
GRASS SPECIES	WEED HEIGHT (inches)	RATE FL. OZ./ ACRE <sup>(1)</sup>	HIGH RATE <sup>(2)</sup>
Bermudagrass ( <i>Cynodon dactylon</i> )			
First Application	3 (or up to 6" runners)	8	16
Repeat Application(s) (if regrowth occurs)	3 (or up to 6" runners)	8	16
Quackgrass ( <i>Elytrigia repens</i> )			
First Application	4 to 8	8	16
Repeat Application(s) (if regrowth occurs)	4 to 8	8	16
Rhizome Johnsongrass ( <i>Sorghum halepense</i> )			
First Application	12 to 24	8	16
Repeat Application(s) (if regrowth occurs)	6 to 18	6	8
Wirestem Muhly ( <i>Muhlenbergia frondosa</i> )			
First Application	4 to 8	8	16
Repeat Application(s) (if regrowth occurs)	4 to 8	8	16
<ul style="list-style-type: none"> <li>• Apply only to actively growing grasses at recommended weed heights.</li> <li>• Apply when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.</li> <li>• Use the high rate under heavy grass pressure and/or when grasses are at maximum height.</li> </ul>			
(1) 8 fl. oz./A = approximately 0.2 fl. oz./1000 sq. ft. (2) 16 fl. oz./A = approximately 0.4 fl. oz./1000 sq. ft. Add a non-ionic surfactant containing at least 80% active ingredient at the rate of 1 pt. per 50 gals. (0.25% v/v)			

## STORAGE AND DISPOSAL

### PROHIBITIONS

Do not contaminate water, food or feed by storage, disposal or cleaning of equipment.

Open dumping is prohibited.

**PESTICIDE STORAGE:** Keep pesticide in original container. Do not put concentrate or dilute into food or drink containers. Store in cool, dry place. Do not store diluted spray.

**Emergency Response:** For help with any spill, leak, fire or exposure involving this material, call day or night 1-800-892-0099.

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**CONTAINER DISPOSAL: Nonrefillable container.** Do not reuse this container to hold materials other than pesticides or dilute pesticides (rinsate). After emptying and cleaning, it may be allowable to temporarily hold makers or other pesticide-related materials in the container. Contact your state regulatory agency to determine allowable practices in your state. Once cleaner, some agricultural plastic pesticide containers can be taken to a container collection site or picked up for recycling. To find the nearest site contact your chemical dealer or manufacturer, or contact The Agricultural Container Recycling Council (ACRCI) at [www.acrecycle.org](http://www.acrecycle.org). If not recycled, then puncture and dispose of in a sanitary landfill, or incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

**For packages up to 5 gallons:** Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ~4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

**For packages greater than 5 gallons and less than 56 gallons:** Triple rinse as follows:

Empty the remaining contents into application equipment or a mix tank. Fill the container ~4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

**For packages greater than 56 gallons:** To deaer the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

**For refillable containers:** Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Gleaning before refilling is the responsibility of the retailer. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

AUTHORITY BROADLEAF® - Reg. TM of E.I. duPont de Nemours & Co. Inc.  
 BANVEL® - Reg. TM of BASF Corporation  
 BASAGRAN® - Reg. TM of BASF AG.  
 BAYTHROID® - Reg. TM Bayer Corporation  
 BETAMIX® - Reg. TM of The Aventis Group  
 BETANEX® - Reg. TM of The Aventis Group  
 BLAZER® - Reg. TM of United Phosphorus, Inc.  
 BRONATE®, BRONATE ADVANCED™ - Reg. TM of Bayer Crop Science  
 BUCTRIL® - Reg. TM of Bayer Corporation  
 CANOPY XL® - Reg. TM of E.I. duPont de Nemours & Co. Inc.  
 CLASSIC® - Reg. TM of E.I. duPont de Nemours & Co., Inc.  
 COBRA® - Reg. TM of Valent U.S.A. Corporation  
 DANITOL® - Reg. TM of Sumitomo Chemical Co., Ltd.  
 DUAL®, DUAL II® AND DUAL MAGNUM® - Reg. TMs of Syngenta Corporation  
 EMINENT® - Reg. TM of Sipcam Agro USA, Inc.  
 FIRSTRATE® - Reg. TM of Dow AgroSciences LLC  
 FLEXSTAR® - Reg. TM of Syngenta Corporation  
 FRONTROW™ - TM of Dow AgroSciences LLC  
 IMI-CORN® - Reg. TM of BASF Corporation  
 LIBERTY LINK® - Reg. TM of The Aventis Group  
 LORSBAN® - Reg. TM of Dow AgroSciences LLC  
 ORTHENE® - Reg. TM of OMS Investments, Inc.  
 POUNCE® - Reg. TM FMC Corporation  
 PROWL® - Reg. TM of BASF Corporation  
 PURSUIT® and PURSUIT DG® - Reg. TMs of BASF Corporation  
 RAPTOR® - Reg. TM of BASF Corporation  
 RESOURCE® - Reg. TM of Valent U.S.A. Corporation  
 RHONOX® - Reg. TM of Nufarm Americas Inc.  
 ROUNDUP READY® and ROUNDUP ULTRA® - Reg. TMs of Monsanto Company  
 SELECT® - Reg. TM of Valent U.S.A. Corporation  
 SENCOR® - Reg. TM of Bayer Corporation  
 STINGER® - Reg. TM of Dow AgroSciences LLC  
 STORM® - Reg. TM of BASF Corporation  
 SYNCHRONY® STS™ - TM and Reg. TM of E.I. duPont de Nemours & Co. Inc.  
 VALOR® - Reg. TM of Valent U.S.A. Corporation  
 TURBO® - Reg. TM of Bayer Corporation  
 WARRIOR® - Reg. TM of Syngenta Corporation

DP BARCODE No.: D384924; FILE SYMBOL No.: 83222-30; PRODUCT NAME: Clethodim 2 EC Herbicide;  
DECISION No.: 441990; PC Code(s): 077501; ACTION CODE: R 310; FOOD Use: Yes

DATE OUT: March 4, 2011

SUBJECT: End Use Product Chemistry Review  
Product Name: Clethodim 2 EC Herbicide

FROM: Shyam Mathur,  
Product Chemistry Team Leader  
Technical Review Branch/RD (7505P)

TO: Jim Stone / Kathryn Montague, RM 23  
Herbicide Branch / RD (7505P)

Company Name: J. Oliver Products, LLC  
Formulation Type: Emulsifiable Concentrate (EC)

*Shyam Mathur*  
3/4/11  
*Jim Stone*  
3/11/11

#### INTRODUCTION:

The Biologic Incorporation, on behalf of the registrant has submitted an application to amend the registration of the end use product "Clethodim 2 EC Herbicide". The purpose of this amendment is to change this registration from a 100% re-pack of an already registered end-use product [REDACTED] to a Formulator's Exemption registration. According to the applicant, the amended product is substantially similar to the registered product "Select 2 EC Herbicide" with Reg. No. 56939-3. The registrant has submitted a CSF for basic formulation and a CSF for alternate formulation (both dated 10-25-10). TRB has been asked to determine the acceptability of the product chemistry data submitted to support the new basic & alternate CSF's and also determine the substantial similarity of the amended product to the registered product.

#### SUMMARY OF FINDINGS:

1. Name of Active Ingredient(s): Clethodim (26.4%).
2. The registrant claims this product is substantially similar in composition to Reg. No. 56939-3
3. All of the source materials of the active ingredient are derived from registered sources- ☒ Yes ☐ No
4. All inert ingredients have been screened by IIAB (11-15-10) and found to be approved for the proposed label uses.
5. Confidential Statement of Formula(s):

☒ Basic - Dated: 10-25-10; Re-submitted: Dated:

☒ Alternate CSF- Dated: 10-25-10; Re-submitted - Dated:

Alternate CSF(s) complies with 40CFR§152.43: ☒ Yes; ☐ No; ☐ NA

\*Product ingredient source information may be entitled to confidential treatment\*

DP BARCODE No.: D384924; FILE SYMBOL No.: 83222-30; PRODUCT NAME: Clethodim 2 EC Herbicide;  
DECISION No.: 441990; PC Code(s): 077501; ACTION CODE: R 310; FOOD Use: Yes

6. Product label

a. Ingredient statement: Nominal concentration of AI listed on CSF(s) concurs with product label (PR Notice 91-2).

☒ Yes, if not, explain below:

Metallic equivalent: ☐ Yes ☒ NA;  
Soluble arsenic: ☐ Yes ☒ NA  
Isomeric ratios: ☐ Yes ☒ NA  
Acid Equivalent: ☐ Yes ☒ NA

b. Health related sub statements: Product contains?

Petroleum distillate at > 10%: ☒ Yes; ☐ No; ☐ NA  
Methanol at > 4%: ☐ Yes; ☒ No; ☐ NA

c. Physical chemical hazard statement: Product label requires a statement per 40 CFR §156.78 for: flammability, explosive potential or electric insulator breakdown?

☒ Yes; ☐ No

Is the sub statement in compliance with 40CFR§156.78 ☒ NA, if not, explain below:

d. Label requires an additional Storage and Disposal statement: ☐ Yes ☒ No; if yes explain below:

**DP BARCODE No.:** D384924; **FILE SYMBOL No.:** 83222-30; **PRODUCT NAME:** Clethodim 2 EC Herbicide;  
**DECISION No.:** 441990; **PC Code(s):** 077501; **ACTION CODE:** R 310; **FOOD Use:** Yes

**7. Group A: Product Chemistry Data**

TRB's determination of the acceptability for the proposed product is listed in the tables below.

Guideline No.	Study Title		Data submitted		TRB's Assessment of Data	MRID Nos.
			Yes	No		
830.1550	Product Identity & Composition		X		A	482915-01
830.1600	Description of materials used to produce the product		X		A	482915-01
830.1650	Description of formulation process		X		A	482915-01
830.1670	Discussion on the formation of impurities		X		A	482915-01
830.1700	Preliminary analysis		NA			482915-01
830.1750	Certified limits (158.350)	Standard certified limits	X			482915-01
		Proposed Limits				
		Justification for wider limits				
830.1800	Enforcement analytical method		X		A	482915-01

A = Acceptance, N = Not Acceptable, G = Data Gap, W = Waiver Request, I = In Progress, NA = Not Applicable

**DP BARCODE No.:** D384924; **FILE SYMBOL No.:** 83222-30; **PRODUCT NAME:** Clethodim 2 EC Herbicide;  
**DECISION No.:** 441990; **PC Code(s):** 077501; **ACTION CODE:** R 310; **FOOD Use:** Yes

#### **CONCLUSIONS:**

The TRB has reviewed the product chemistry data submitted for the proposed end-use product and has concluded that:

1. The proposed CSF's for basic & alternate formulations (both dated 10-25-10) are acceptable.
2. The data submitted corresponding to guidelines 830.1600 (description of materials used to produce the product), 830.1650 (description of formulation process), and 830.1670 (discussion on the formation of impurity), 830.1750 (certified limits) and 830.1800 (enforcement analytical method) are acceptable.
3. The product chemistry data submitted corresponding to guidelines 830.6302 (color), 830.6303 (physical state), 830.6304 (odor), 830.6314 (oxidizing/reduction), 830.7000 (pH) and 830.7300 (density) are acceptable.
4. No data was submitted corresponding to guideline 830.6314 (oxidation/reduction). The registrant must generate this study to determine the compatibility of the end use product with common house hold chemicals, like, kerosene, an oxidizing and reducing agent, water etc. Please follow the 830.6314 Product Property Guidelines. This is considered as a data gap.
5. The registrant is advised to conduct one year storage stability (830.6317) and corrosion characteristics (830.6320) studies on the proposed product stored in the commercial container under ware house conditions. It is recommended that the observations should be made at three months intervals.
6. The amended product with Reg. No. 83222-30 was determined to be substantially similar to the cited product with Reg. No. 56939-3 from product chemistry point of view.
7. The product label under Physical-Chemical Hazard must be revised as follows: "Combustible. Do not use or store near heat or open flame".



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES

**TECHNICAL REVIEW BRANCH  
SIMILARITY CLINIC DETERMINATION**

24/FEB/2011

MEMORANDUM

Subject: Name of Pesticide Product: Clethodim 2 EC Herbicide  
EPA Reg. No. /File Symbol: 83222-30  
DP Barcode: D384925  
Decision No: 441990  
Action Code: R340  
PC Code: 121011 (clethodim)

From: Eugenia McAndrew, Biologist  
Technical Review Branch  
Registration Division (7505P)

*E. McAndrew*  
*Hasler*

To: James Stone, RM Team 23  
Herbicide Branch  
Registration Division (7505P)

Applicant: J. Oliver Products, LLC  
3187 Robertson Gin Road  
Hernando, MS 38632

FORMULATION FROM LABEL:

<u>Active Ingredient(s):</u>	<u>% by wt.</u>
Clethodim	26.4
<u>Inert Ingredient(s):</u>	<u>73.6</u>
Total:	100.0%

**ACTION REQUESTED:** The Risk Manager requests: "New basic and alternate formulations supercede first registered 100% repack. Under the Cite All Method of Support is this product substantially similar to cited me too product."



**BACKGROUND:** J. Oliver Products, LLC has applied for an amendment to the registration for Clethodim 2 EC Herbicide, EPA Reg. No. 83222-30. This product was originally registered as a 100% repack. The purpose of the amendment is to change from a repack registration to the Formulator's Exemption. The registrant has submitted a new basic CSF and one alternate CSF both dated October 25, 2010 which will supercede all previous CSFs.

The Registrant is claiming that 83222-30 is substantially similar to Select 2EC Herbicide, EPA Reg. No. 59639-3. The active ingredient in both products is 26.4% clethodim. The Registrant is using the cite-all method of data support to satisfy the acute toxicity data requirements. A search of the OPP electronic databases shows that acute oral, acute dermal, acute inhalation, primary eye irritation and primary skin irritation studies submitted to support the registration of 59639-3 were reviewed in a Health Effects Division memo (J. Rowe; TXR No. 007972; 11/JUNE/1990). The dermal sensitization study was reviewed in a separate memo (McAndrew; D251587; 08/FEB/1999).

#### **RECOMMENDATIONS:**

1. TRB compared the formulations of the proposed product, 83222-30, and the cited product, 59639-3, and determined that the two products are toxicologically substantially similar.
2. The acute toxicity profile for Clethodim 2 EC Herbicide, EPA Reg. No. 83222-30, is as follows:

acute oral toxicity	III	cited	EPA Reg. No. 59639-3
acute dermal toxicity	IV	cited	EPA Reg. No. 59639-3
acute inhalation toxicity	IV*	cited	EPA Reg. No. 59639-3
primary eye irritation	II	cited	EPA Reg. No. 59639-3
primary skin irritation	III	cited	EPA Reg. No. 59639-3
dermal sensitization	sensitizer	cited	EPA Reg. No. 59639-3

\*Placed in Toxicity Category III in the 1990 memo but is in Toxicity category IV by today's standards

3. The proposed basic and alternate CSFs dated October 25, 2010 must be accepted by the TRB Product Chemistry Team.

**LABELING:** Based on the toxicity profile above, the following are the precautionary and first aid statements for this product as obtained from the Label Review System:

**PRODUCT ID #:** 083222-00030

**PRODUCT NAME:** Clethodim 2 EC Herbicide

**PRECAUTIONARY STATEMENTS**

**SIGNAL WORD:** WARNING

**SPANISH SIGNAL WORD:** AVISO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.  
(If you do not understand the label, find someone to explain it to you in detail.)

**Hazards to Humans and Domestic Animals:**

Contains Petroleum Distillate.

Causes substantial but temporary eye injury. Harmful if swallowed. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Avoid contact with skin. Do not get in eyes or on clothing.

**Personal Protective Equipment for Handlers:**

Wear protective eyewear (goggles, face shield, or safety glasses). Wear long-sleeved shirt and long pants, socks, shoes, and chemical-resistant gloves (such as Barrier Laminate, Viton, Selection Category G).

**First Aid:**

If in eyes:

- Hold eye open and rinse slowly and gently with water for 15-20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing.
- Call a poison control center or doctor for treatment advice.

If swallowed:

- Call a poison control center or doctor immediately for treatment advice.
- Do not induce vomiting unless told to by a poison control center or doctor.
- Do not give any liquid to the person.
- Do not give anything by mouth to an unconscious person.

If on skin:

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

**NOTE TO PHYSICIAN:** May pose an aspiration pneumonia hazard. Contains petroleum distillate.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-xxx-xxxx for emergency medical treatment information.

**DP BARCODE No.:** D384924; **FILE SYMBOL No.:** 83222-30; **PRODUCT NAME:** Clethodim 2 EC Herbicide;  
**DECISION No.:** 441990; **PC Code(s):** 077501; **ACTION CODE:** R 310; **FOOD Use:** Yes

**8. Group B:**

<b>Guideline No.</b>	<b>Study Title</b>	<b>Value or Qualitative Description</b>	<b>TRB's Assessment of Data</b>	<b>MRID Nos.</b>
830.6303	Physical State	Liquid	A	482915-02
830.6315	Flammability	159°F	A	482915-02
830.6316	Explosibility	NA		
830.7000	pH	3.94 (1% dispersion)	A	482915-02
830.7300	Density (units)	0.95 g/cc (7.95 lbs/gal) 26°C 0.939 g/cc (7.84 lbs/gal) 41°C	A	482915-02

A = Acceptance, N = Not Acceptable, G = Data Gap, W = Waiver request, NA = Not applicable, I = In progress.

**User Safety Recommendations:**

Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

FEE

# DATA PACKAGE BEAN SHEET

Date: 20-Dec-2010

Page 1 of 2

Decision #: 441990

DP #: (384924)

PRIA

Parent DP #:

Submission #: 885510

## \*\*\* Registration Information \*\*\*

Registration: **83222-30 - CLETHODIM 2 EC HERBICIDE**

Company: 83222 - J. OLIVER PRODUCTS, LLC

Risk Manager: RM 23 - Kathryn Montague - (703) 305-1243 Room# PY1 S-7332

Risk Manager Reviewer: James Stone JSTONE

Sent Date: \_\_\_\_\_

Calculated Due Date: 01-Apr-2011

Edited Due Date: \_\_\_\_\_

Type of Registration: Product Registration - Section 3

Action Desc: (R340) NON-FAST-TRACK (INCLUDES CHANGES TO PRECAUTIONARY LABEL STATEME

Ingredients: 121011, Clethodim(26.4%)

R340  
#18095

## \*\*\* Data Package Information \*\*\*

Expedite: ☐ Yes ☒ No

Date Sent: 20-Dec-2010

Due Back: \_\_\_\_\_

DP Ingredient: 121011, Clethodim

DP Title: \_\_\_\_\_

CSF Included: ☒ Yes ☐ No

Label Included: ☒ Yes ☐ No

Parent DP #: \_\_\_\_\_

### Assigned To

Date In

Date Out

Organization: RD / TRB

Last Possible Science Due Date: 02-Mar-2011 ✓

Team Name: CHEM

Science Due Date: \_\_\_\_\_

Reviewer Name: S. J. Youn Mathew

3/31/11

3/4/11

Sub Data Package Due Date: \_\_\_\_\_

Contractor Name: \_\_\_\_\_

## \*\*\* Studies Sent for Review \*\*\*

Printed on Page 2

## \*\*\* Additional Data Package for this Decision \*\*\*

No Additional Data Packages

## \*\*\* Data Package Instructions \*\*\*

Review revised basic and alternate formulations and supporting product chemistry data. Supersedes 100% repack that was first registered.

# DATA PACKAGE BEAN SHEET

Date: 20-Dec-2010

Page 1 of 1

Decision #: 441990

DP #: (384925)

PRIA

Parent DP #:

Submission #: 885510

## \*\*\* Registration Information \*\*\*

Registration: 83222-30 - CLETHODIM 2 EC HERBICIDE

Company: 83222 - J. OLIVER PRODUCTS, LLC

Risk Manager: RM 23 - Kathryn Montague - (703) 305-1243 Room# PY1 S-7332

Risk Manager Reviewer: James Stone JSTONE

Sent Date: \_\_\_\_\_

Calculated Due Date: 01-Apr-2011

Edited Due Date: \_\_\_\_\_

Type of Registration: Product Registration - Section 3

Action Desc: (R340) NON-FAST-TRACK (INCLUDES CHANGES TO PRECAUTIONARY LABEL STATEMENT)

Ingredients: 121011, Clethodim(26.4%)

*R3200092*  
*#180092*

## \*\*\* Data Package Information \*\*\*

Expedite: ☐ Yes ☒ No

Date Sent: 20-Dec-2010

Due Back: \_\_\_\_\_

DP Ingredient: 121011, Clethodim

DP Title: \_\_\_\_\_

CSF Included: ☒ Yes ☐ No

Label Included: ☒ Yes ☐ No

Parent DP #: \_\_\_\_\_

### Assigned To

Date In

Date Out

Organization: RD / TRB

Last Possible Science Due Date: 02-Mar-2011

Team Name: TOX

Science Due Date: \_\_\_\_\_

Reviewer Name: \_\_\_\_\_

Sub Data Package Due Date: \_\_\_\_\_

Contractor Name: \_\_\_\_\_

## \*\*\* Studies Sent for Review \*\*\*

No Studies

## \*\*\* Additional Data Package for this Decision \*\*\*

Can be printed on its own page

## \*\*\* Data Package Instructions \*\*\*

For Similarity Clinic.

New basic and alternate formulations superseded first registered 100% repack. Under the Cite All Method of Support is this product substantially similar to cited me to product

71



United States  
Environmental Protection Agency  
Washington, DC 20460

☐ Registration  
☒ Amendment  
☐ Other

OPP Identifier Number

## Application for Pesticide - Section I

1. Company/Product Number 83222-30	2. EPA Product Manager K. Montague	3. Proposed Classification <input type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) Clethodim 2EC Herbicide	PM# 23	
5. Name and Address of Applicant (Include ZIP Code) J. Oliver Products, LLC c/o Biologic, Inc. 115 Obtuse Hill Road Brookfield, CT 06804 <input type="checkbox"/> Check if this is a new address	6. Expedited Review. In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. 59639-3 Product Name Select 2EC Herbicide	

## Section - II

<input checked="" type="checkbox"/> Amendment - Explain below.	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application.
<input type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - Explain below.

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

This amendment is to change this registration from a 100% re-pack of an existing end-use registration to the Formulator's Exemption under FIFRA section 3(c) (2)(D). This action will fall within the category as stated in Table 5 - Registration Division: Amendments to Registration as published in the Federal Register. This product is further defined under EPA No. R340; CR No. 54 as a "Non-Fast-Track" amendment. The PRIA fee for this registration action is therefore \$3,444.

Jane M. Miller - Tel: 203-740-1200; Fax: 203-740-1220; Email: jmill@biologicconsulting.com

## Section - III

1. Material This Product Will Be Packaged In:				2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Metal <input checked="" type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____		
* Certification must be submitted		If "Yes" Unit Packaging wgt.	No. per container	If "Yes" Package wgt	No. per container
3. Location of Net Contents Information <input checked="" type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container 1, 2.5, 56, 265 gal & bulk		5. Location of Label Directions <input checked="" type="checkbox"/>	
6. Manner in Which Label is Affixed to Product <input checked="" type="checkbox"/> Lithograph Paper glued Stenciled		<input type="checkbox"/> Other _____			

## Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)					
Name Jane M. Miller		Title Agent		Telephone No. (Include Area Code) (203) 740-1200	
Certification I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment both under applicable law.					6. Date Application Received (Stamped)  
2. Signature 		3. Title Agent			
4. Typed Name Jane M. Miller		5. Date October 25, 2010			



October 30, 2010

Document Processing Desk (REGFEE)  
Office of Pesticide Programs (7504P)  
US Environmental Protection Agency  
One Potomac Yard  
2777 S. Crystal Drive  
Room S-4900, 4<sup>th</sup> Floor  
Arlington, VA 22202

Attention: Ms. Kathryn Montague (PM #23)  
RE: Clethodim 2EC Herbicide; EPA Reg. No.83222-30  
Application for Pesticide Amendment

Dear Ms. Montague:

On behalf of J. Oliver Products, LLC we are submitting an Application for Pesticide Amendment for the above mentioned product. The purpose of this amendment is to change this registration from a 100% "re-pack" of an already registered end-use product to a Formulator's Exemption registration.

The following documents are enclosed to process this registration:

Volume 1 Administrative Materials

- Application for Pesticide Registration (EPA Form 8570-1)
- Certification With Respect to Citation of Data (EPA Form 8570-34)
- Data Matrix (EPA Form 8570-35)
- Formulator's Exemption Statement (EPA Form 8570-27)
- Confidential Statement of Formula (EPA Form 8570-4)
- Five (5) copies of proposed revised labeling

Volume 2 Product Identity and Composition

OPPTS Guideline 830.1550 through 830.1900

Volume 3 Physical and Chemical Characteristics Warthog 2 EC

OPPTS Guideline 830.6302 through 830.7300

This application is submitted under the Formulator's Exemption provision of FIFRA section 3(c)(2)(D). In addition, according to FIFRA section 3(c)(3)(b)(i) this application qualifies for an expedited review on the basis that this product is similar in labeling and composition to 56939-3, "Select 2 EC Herbicide".

To satisfy the data requirements for acute toxicity, J. Oliver Products has chosen the cite-all option under the selective method of support and has sent offer to pay letters to those companies appearing on the EPA Data Submitters List.

This application for pesticide amendment will fall within the category on Table 5 - Registration Division: Amendments to Registration, EPA No. R340; CR No. 54. The PRIA fee for this application is \$3,617.

Should you have any questions, or wish to reach me, please feel free to contact our office at 203-740-1200.

Sincerely,

  
Jane Miller  
Agent to J. Oliver Products, LLC



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**401 M Street, S.W.**  
**WASHINGTON, D.C. 20460**

**Paperwork Reduction Act Notice:** The public reporting burden for this collection of information is estimated to average 1.25 hours per response for registration and 0.25 hours per response for reregistration and special review activities, including time for reading the instructions and completing the necessary forms. Send comments regarding burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden to: Director, OPPE Information Management Division (2137), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, DC 20460. Do not send the completed form to this address.

**Certification with Respect to Citation of Data**

Applicant's/Registrant's Name, Address, and Telephone Number J. Oliver Products, LLC 3187 Robertson Gin Road Hernando, MS 38632	EPA Registration Number/File Symbol 83222-30
Active Ingredient(s) and/or representative test compound(s) Clethodim	Date October 25, 2010
General Use Pattern(s) (list all those claimed for this product using 40 CFR Part 158) Terrestrial Food, Terrestrial Non-Food, Domestic Outdoor	Product Name Clethodim 2EC Herbicide

**NOTE:** If your product is a 100% repackaging of another purchased EPA-registered product labeled for all the same uses on your label, you do not need to submit this form. You must submit the Formulator's Exemption Statement (EPA Form 8570-27).

☐ I am responding to a Data-Call-In Notice, and have included with this form a list of companies sent offers of compensation (the Data Matrix form should be used for this purpose).

**SECTION I: METHOD OF DATA SUPPORT (Check one method only)**

<input type="checkbox"/> I am using the cite-all method of support, and have included with this form a list of companies sent offers of compensation (the Data Matrix form should be used for this purpose).	<input checked="" type="checkbox"/> I am using the selective method of support (or cite-all option under the selective method), and have included with this form a completed list of data requirements (the Data Matrix form must be used).
--	---

**SECTION II: GENERAL OFFER TO PAY**

[Required if using the cite-all method or when using the cite-all option under the selective method to satisfy one or more data requirements]

☒ I hereby offer and agree to pay compensation, to other persons, with regard to the approval of this application, to the extent required by FIFRA.

**SECTION III: CERTIFICATION**

I certify that this application for registration, this form for reregistration, or this Data-Call-In response is supported by all data submitted or cited in the application for registration, the form for reregistration, or the Data-Call-In response. In addition, if the cite-all option or cite-all option under the selective method is indicated in Section I, this application is supported by all data in the Agency's files that (1) concern the properties or effects of this product or an identical or substantially similar product, or one or more of the ingredients in this product; and (2) is a type of data that would be required to be submitted under the data requirements in effect on the date of approval of this application if the application sought the initial registration of a product of identical or similar composition and uses.

I certify that for each exclusive use study cited in support of this registration or reregistration, that I am the original data submitter or that I have obtained the written permission of the original data submitter to cite that study.

I certify that for each study cited in support of this registration or reregistration that is not an exclusive use study, either: (a) I am the original data submitter; (b) I have obtained the permission of the original data submitter to use the study in support of this application; (c) all periods of eligibility for compensation have expired for the study; (d) the study is in the public literature; or (e) I have notified in writing the company that submitted the study and have offered (i) to pay compensation to the extent required by sections 3(c)(1)(F) and/or 3(c)(2)(B) of FIFRA; and (ii) to commence negotiations to determine the amount and terms of compensation, if any, to be paid for the use of the study.

I certify that in all instances where an offer of compensation is required, copies of all offers to pay compensation and evidence of their delivery in accordance with sections 3(c)(1)(F) and/or 3(c)(2)(B) of FIFRA are available and will be submitted to the Agency upon request. Should I fail to produce such evidence to the Agency upon request, I understand that the Agency may initiate action to deny, cancel or suspend the registration of my product in conformity with FIFRA.

I certify that the statements I have made on this form and all attachments to it are true, accurate, and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

Signature

Date

Typed or Printed Name and Title

Oct. 25, 2010

Jane M. Miller, Agent

United States  
Environmental Protection Agency  
Washington, DC 20460  
**Formulator's Exemption Statement**  
*(40 CFR 152.85)*

EPA File Symbol/Registration Number

**J. Oliver Products, LLC**  
c/o Biologic, Inc.  
115 Obtuse Hill Road  
Brookfield, Ct 06804

83222-30

Product Name

## Clethodim 2EC Herbicide

Date of Confidential Statement of Formula (EPA Form 8570-4)

October 25, 2010

**(1) This product contains the following active ingredient(s):**

## Clethodim

(2) Of these, each active ingredient listed in paragraph (4) is present solely as the result of the use of that active ingredient in the manufacturing, formulation or repackaging another product which contains that active ingredient which is registered under FIFRA Section 3, is purchased by us from another producer, and is labeled for at least each use for which my product is proposed to be labeled.

**(3) Indicate by checking (A) or (B) below which paragraph applies:**

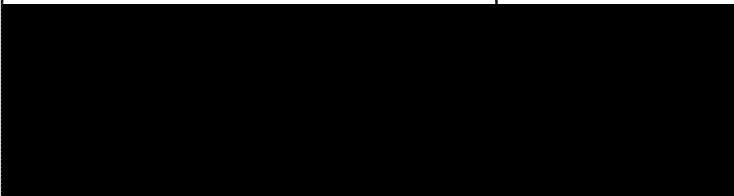


☒ (A) An accurate Confidential Statement of Formula (*EPA FORM 8570-4*) for the above identified product is attached to this statement. That formula statement indicates, by company name, registration number, and product name, the source of the active ingredient(s) listed in paragraph (1).

**OR**

☐ (B) The Confidential Statement of Formula (CSF) (EPA Form 8570-4) referenced above and on file with the EPA is complete, current, and accurate and contains the information required on the current CSF.

**(4) The following active ingredients in this product qualify for the formulator's exemption.**

### Source

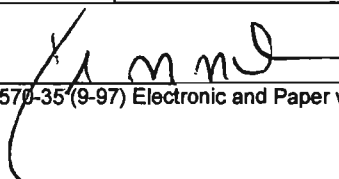
Active Ingredient	Product Name	Registration Number
Clethodim		
Signature	Name and Title	Date
	Jane M. Miller, Agent	10/25/10

\*Product ingredient source information may be entitled to confidential treatment\*

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
2EC Herbicide  
401 M Street, S.W.  
WASHINGTON, D.C. 20460**

**Paperwork Reduction Act Notice:** The public reporting burden for this collection of information is estimated to average 0.25 hours per response for registration activities and 0.25 hours per reregistration and special review activities, including time for reviewing the instructions and completing the necessary forms. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden to: Director, OPPE Information Management Division (2137), U.S. Environmental Protection Agency, 401 M Washington, DC 20460. Do not send the form to this address.

**DATA MATRIX**

Date October 25, 2010			EPA Reg. No./File Symbol 83222-30		Page 1 of 5
Applicant's/Registrant's Name & Address J. Oliver Products, LLC 3187 Robertson Gin Road Hernando, MS 38632			Product Clethodim 2EC Herbicide		
Ingredient Clethodim					
Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
830.1550	Product Identity and Composition		J. Oliver Products, LLC	OWN	
830.1600	Description of Materials Used to Produce the Product		J. Oliver Products, LLC	OWN	
830.1650	Description of Formulation Process		J. Oliver Products, LLC	OWN	
830.1670	Discussion of Formation of Impurities		J. Oliver Products, LLC	OWN	
830.1750	Certified Limits		J. Oliver Products, LLC	OWN	
830.1800	Enforcement Analytical Method		J. Oliver Products, LLC	OWN	
830.1900	Submittal of Samples				1
830.6302	Color		J. Oliver Products, LLC	OWN	
830.6303	Physical State		J. Oliver Products, LLC	OWN	
830.6304	Odor		J. Oliver Products, LLC	OWN	
830.6314	Oxidation / Reduction: Chemical Incompatibility				2
830.6315	Flammability / Flame Extension		J. Oliver Products, LLC	OWN	
830.6316	Explosibility				3
830.6317	Storage Stability				4
830.6319	Miscibility				5
Signature 			Name and Title Jane M. Miller, Consultant for J. Oliver Products, LLC		Date 10/25/2010


Based on EPA Form 8570-35 (9-97) Electronic and Paper versions available. Submit only Paper version.

Agency Internal Use Copy

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
401 M Street, S.W.  
WASHINGTON, D.C. 20460**

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**DATA MATRIX**

Date October 25, 2010			EPA Reg. No./File Symbol 83222-30		Page 2 of 5
Applicant's/Registrant's Name & Address J. Oliver Products, LLC 3187 Robertson Gin Road Hemando, MS 38632			Product Clethodim 2EC Herbicide		
Ingredient Clethodim					
Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
830.6320	Corrosion Characteristics				6
830.6321	Dielectric Breakdown Voltage				7
830.7000	pH		J. Oliver Products, LLC	OWN	
830.7100	Viscosity		J. Oliver Products, LLC	OWN	
830.7300	Density		J. Oliver Products, LLC	OWN	
870.1100	Acute Oral Toxicity	Cite-All		PAY	
870.1200	Acute Dermal Toxicity	Cite-All		PAY	
870.1300	Acute Inhalation	Cite-All		PAY	
870.2400	Acute Eye Irritation	Cite-All		PAY	
870.2500	Acute Dermal Irritation	Cite-All		PAY	
870.2600	Skin Sensitization	Cite-All		PAY	
The following companies have been sent offer to pay letters:					
			Aceto Agricultural Chemicals Corp	PAY	
			Lake Success, NY		
			Helena Chemical Co.	PAY	
			Memphis, TN		
			Ritter Chemical, LLC	PAY	
			Gig Harbor, WA		
Signature 			Name and Title Jane M. Miller, Consultant for J. Oliver Products, LLC		Date 10/25/2010

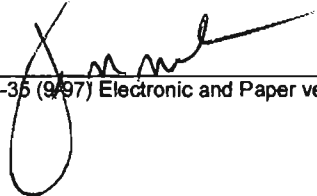
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**DATA MATRIX**

Date October 25, 2010			EPA Reg. No./File Symbol 83222-30		Page 3 of 5
Applicant's/Registrant's Name & Address J. Oliver Products, LLC 3187 Robertson Gln Road Hemando, MS 38632			Product Clethodim 2EC Herbicide		
Ingredient Clethodim					
Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
			Tacoma AG, LLC	PAY	
			Brookfield, CT		
			Amide LLC	PAY	
			Irvine, CA		
			Agricultural Re-Entry Task Force	PAY	
			Washington, DC 20005		
			Agricultural Handlers Exposure TF	PAY	
			Macon, MO		
			FIFRA Endangered Species TF	PAY	
			Washington, DC		
			Agri Chem Mfg.	PAY	
			Raleigh, NC		
			Spray Drift Task Force	PAY	
			Washington, DC 20006		
			Loveland Products	PAY	
			Greeley, CO		
			Outdoor Residential Task Force	PAY	
			Washington, DC 20005		
Signature 			Name and Title Jane M. Miller, Consultant for J. Oliver Products, LLC		Date 10/25/2010

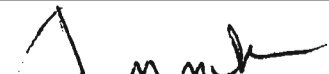
Based on EPA Form 8570-35 (9-97) Electronic and Paper versions available. Submit only Paper version.

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**401 M Street, S.W.**  
**WASHINGTON, D.C. 20460**

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**DATA MATRIX**

Date October 25, 2010			EPA Reg. No./File Symbol 83222-30		Page 4 of 5
Applicant's/Registrant's Name & Address J. Oliver Products, LLC 3187 Robertson Gin Road Hemando, MS 38632			Product Clethodim 2EC Herbicide		
Ingredient Clethodim					
Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
			Albaugh Inc.	PAY	
			Ankeny, IA		
			BASF Sparks	PAY	
			Research Triangle Park, NC		
			Valent USA Corp.	PAY	
			Walnut Creek, CA		
			Makhteshim-Agan of North America	PAY	
			Raleigh, NC		
			Arysta Lifescience North America	PAY	
			Cary, NC		
			Nisso BASF Agro Co.	PAY	
			Ft. Stewart, GA		
Signature 			Name and Title Jane M. Miller, Consultant for J. Oliver Products, LLC		Date 10/25/2010

Based on EPA Form 8570-35 (9-97) Electronic and Paper versions available. Submit only Paper version.

Agency Internal Use Copy

### Data Matrix Footnotes

1. Not required at this time for this end-use product.
2. Not applicable. Neither the technical grade active ingredient nor the inert ingredients are considered strong oxidizing or reducing agents.
3. Not applicable. Neither the technical grade active ingredient nor the inert ingredients are considered as potentially explosive.
4. Study in progress.
5. Not applicable. The product is not intended to be diluted with a petroleum solvent.
6. Study in progress.
7. Not applicable. The product is not intended for use around electrical equipment.



## Memorandum

Date: 11/15/10

To: PM 23, Regulatory Manager

From: Information Services Branch, ITRMD

Your receipt of this data submission is not an indication that MRIDs for the enclosed studies have been posted to OPPIN.

**We expect that it will be approximately 5 days from the above date before the study-level data is available in OPPIN.**

If you have any questions about this process, please contact Teresa Downs (305-5363).

This is a:

☒ **fully accepted submission**

☐ partially accepted submission

☐ rejected submission

P340

83222-30

Waiting  
for admin

11/16/10

Km



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

November 12, 2010

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

BIOLOGIC, INC.  
J. OLIVER PRODUCTS, LLC  
115 OBTUSE HILL ROAD  
BROOKFIELD, CT 06804-

Report of Analysis for Compliance with PR Notice 86-5

Thank you for your submittal of 10-NOV-10. Our staff has completed a preliminary analysis of the material. The results are provided as follows:

Your submittal was found to be in full compliance with the standards for submission of data contained in PR Notice 86-5. A copy of your bibliography is enclosed, annotated with Master Record ID's (MRIDs) assigned to each document submitted. Please use these numbers in all future references to these documents. Thank you for your cooperation. If you have any questions concerning this data submission, please raise them with the cognizant Product Manager, to whom the data have been released.

# Receipt for Section 3

S: 885510

Resubmission: ☐ Yes ☒ No

Regulatory Type: Product Registration - Section 3

Fee For Service: ☐ Yes ☒ No

Application Type: Amendment

Billable: ☒ Yes ☐ No

Company: 83222 J. OLIVER PRODUCTS, LLC

V

Print Letter

Enter More Information

Tracking

Risk Manager: Registration Division, Risk Management Team 23

Product #: 83222-30 Product Name: CLETHODIM 2 EC HERBICIDE

Override:

Me Too

Me Too

Section3: 59639-3

Product Name: SELECT 2EC HERBICIDE

Application Date: 25-Oct-2010

OPP Rec'd Date: 10-Nov-2010

Front End Date: 12-Nov-2010

Risk Manager Send Date:

FFS Due Date:

Negotiated Due Date:

OPP Target Date:

Fast Track ☐

New Ingredient: ☐

Receipt Description:

Amendment to change the registration

New Ingredient:

Request Date:

New Ingredient:

Received Date:

Form A: ☐

Signature Date:

Form E: ☐

Signature Date:

Receipt Content

Study

CSF

View/Edit

Document Processing Desk (REGFEE)  
Office of Pesticide Programs (7504P)  
US Environmental Protection Agency  
One Potomac Yard  
2777 S. Crystal Drive  
Room S-4900, 4<sup>th</sup> Floor  
Arlington, VA 22202

Dear Ms. Montague:

The following documents are enclosed to process this registration:

- Application for Pesticide Registration (EPA Form 8570-1)
- Certification With Respect to Citation of Data (EPA Form 8570-34)
- Data Matrix (EPA Form 8570-35)
- Formulator's Exemption Statement (EPA Form 8570-27)
- Confidential Statement of Formula (EPA Form 8570-4)
- Five (5) copies of proposed revised labeling

**48291501** OPPTS Guideline 830.1550 through 830.1900

**48291502** Volume 3 Physical and Chemical Characteristics  
OPPTS Guideline 830.6302 through 830.7300

To satisfy the data requirements for acute toxicity, J. Oliver Products has chosen the cite-all option under the selective method of support and has sent offer to pay letters to those companies appearing on the EPA Data Submitters List.

This application for pesticide amendment will fall within the category on Table 5 - Registration Division: Amendments to Registration, EPA No. R340; CR No. 54. The PRIA fee for this application is \$3,617.

Should you have any questions, or wish to reach me, please feel free to contact our office at 203-740-1200.

Sincerely,

~~Jane Miller~~  
Agent to J. Oliver Products, LLC

# Decision Information for 83222-30

Decision Seq: 441990	Action Code: R340, NON-FAST-TRACK (INCLUDES CHANGES TO PRECAUTIONS)			Decision Status
FFS Start Date: 01-Dec-2010	Tentative Init: No	FFS Original Decision:		Tracking
Due Date: 01-Apr-2011	75-Day Due Date:	FFS EUP Decision:		Create Resubmission
OPP Target Due Dt:	21-Day Screen Dt: 01-Dec-2010	FFS Primary Decision:		FFS Letters
Negotiated Due Dt:	Start/Stop Clock	FGRA Clock:		Waiver Documentation
Registrant:	Response Due Date:	Days Elapsed:		Action Code History
Current Status: PENDING (12-Nov-2010)				Secondary Decision

Decision Comments	Payment	Unmatched Payments	75 Day Letters
Meetings & Milestones	FFS Information	FFS Negotiated Due Dates	OPP Target Due Date
Decision Ownership	Receipts	Data Package	Reduced Risk

Receipts	Staff Member	Reg/DCI Number	Submission Due Dt	Response
S: 885510	Stone, James	83222-30	01-Apr-2011	PENDING
NA				

Viewing Record 1 of 1

R340

11/22/10

due 4/1/11

Hi, Jim,

This was a 100% repeat; They now want to formulate.

Thanks, checked out  
Kay to Kay

**21-Day Screen of Amendment**  
**(Completed by Contractor)**

**21-day Expires on** 12-1-10

**Document Part Of:** 83222-30  
**MRID, If Any:** 482915

**Content Screen: Recommended to**  
**Pass/Fail**

**86-5 Review:** **Passed**/Failed/NA

**Document returned to:**

STEPHEN SCHABLER

PM-23

# PRIA 2 – 21 Day Content Screen Review Worksheet

(EPA/OPP Use Only)

3/23/09

21 Day Screen Start Date: 11-10-10

Experts In-Processing Signature: MF Harrington Date 11-12-10 Fee Paid: Yes ☒

Division management contacted on issues No ☐ Yes ☐ Date \_\_\_\_\_

EPA Reg. Number: <u>83222-30</u>		EPA Receipt Date: <u>11-10-10</u>				
Items for Review				Yes	No	N/A*
1	<b>Application Form</b> (EPA Form 8570-1)(link to form) signed & complete including package type			X		
2	<b>Confidential Statement of Formula</b> all boxes completed, form signed, and dated (EPA Form 8570-4) (Link to form)			X		
	a) All inerts (link to <a href="http://www.epa.gov/opprd001/inerts/">http://www.epa.gov/opprd001/inerts/</a> ), including fragrances, approved for the proposed uses (see Footnote A)	yes	no			
		X				
3	<b>Certification with Respect to Citation of Data</b> (EPA Form 8570-34) (Link to form) completed and signed (N/A if 100% repack)			X		
	Certificate and data matrix consistent			X		
	If applicant is relying on data that are compensable, is the offer to pay statement included. (see Footnote B)	yes	no			
	If applicable, is there a letter of Authorization for exclusive use only.					
4	<b>Formulator's Exemption Statement</b> (EPA Form 8570-27) (Link to form) completed and signed (N/A if source is unregistered or applicant owns the technical)			X		
	<b>Data Matrix</b> (EPA Form 8570-35) (Link to form) both internal and external copies (PR 98-5) (Link to PR 98-5) completed and signed (N/A if 100% repack)			X		
5	a) Selective Method (Fee category experts use)	yes	no			
		X				
	b) Cite-All (Fee category experts use)					
	c) Applicant owns all data (Fee category experts use)					
6	<b>5 Copies of Label</b> (link to <a href="http://www.epa.gov/oppfead1/labeling/lrm/">http://www.epa.gov/oppfead1/labeling/lrm/</a> ) (Electronic labels on CD are encouraged and guidance is available)( link to <a href="http://www.epa.gov/pesticides/regulating/registering/submissions/index.htm#labels">http://www.epa.gov/pesticides/regulating/registering/submissions/index.htm#labels</a> )			X		

7	Is the data package consistent with PR Notice 86-5 (link to PRN 86-5)	X		
8	Notice of Filing (link to <a href="http://www.epa.gov/pesticides/regulating/tolerance_petitions.htm">http://www.epa.gov/pesticides/regulating/tolerance_petitions.htm</a> ) included with petitions (link to <a href="http://www.epa.gov/pesticides/regulating/tolerances.htm">http://www.epa.gov/pesticides/regulating/tolerances.htm</a> )			X
9	If applicable for conventional applications, reduced risk rationale (link to <a href="http://www.epa.gov/opprd001/workplan/reducedrisk.html">http://www.epa.gov/opprd001/workplan/reducedrisk.html</a> )			X
10	Required Data (link to <a href="http://www.epa.gov/pesticides/regulating/data_requirements.htm">http://www.epa.gov/pesticides/regulating/data_requirements.htm</a> ) and/or data waivers. See Footnote C.			X
	a) List study (or studies) not included with application			



**Comments:**

INERTS APPROVED UNDER 40 CFR 180.910  
AA 11/15/10

DATA PASSED 86-S REVIEW.  
AA 11/15/10

FOOD USE - PRE HARVEST PRODUCT.

MRID 482915

\* N/A – Not Applicable

**Footnotes**

A. During the 21 day initial content review, all CSFs will be reviewed to determine whether all inerts listed, including fragrances, are approved for the proposed uses. If an unapproved inert is identified, the applicant must either 1) resolve the inert issue by, for example, removing the inert, substituting it with an approved inert, submitting documentation that EPA approved the inert for the proposed pesticidal uses, correcting mistakes on the CSF, etc. or 2) provide the data to support OPP approval of the inert or 3) withdraw the application. Removing or substituting an inert ingredient will require a new CSF and may require submission of data. All information, forms, data and documentation resolving the inert issue must have been received by the Agency or the application withdrawn within the 21 day period, otherwise, the Agency will reject the application as described below.

To successfully complete this aspect of the 21 day initial content screen, applicants are **strongly encouraged** to verify that all inert ingredients have been approved for the application's uses **even if a product is currently registered** by consulting the inert Web

site [link to <http://www.epa.gov/opprd001/inerts/lists.html>] and if the inert is not approved, to **obtain the necessary inert approval prior to submitting an application to register a pesticide product containing that inert ingredient**. Some inert ingredients are no longer approved for food uses or certain types of uses. The name and/or CAS number on a CSF must match the name and CAS number on this web site. Simple typographical errors in the name or CAS number have resulted in processing delays.

If an inert is not listed on the inert ingredient web site and the applicant believes that the inert has been approved, the applicant should contact the Inert Ingredient Assessment Branch (IIAB) at [inertsbranch@epa.gov](mailto:inertsbranch@epa.gov) and resolve the issue. Copies of the correspondence with IIAB resolving the issue should accompany the application. All new inerts except PIP inerts are reviewed by IIAB. The IIAB should also be contacted for any questions on what supporting data needs to be submitted for and the Agency's inert review process. Questions on PIP inerts should be directed to the Chief of Microbial Pesticides Branch [Link to [http://www.epa.gov/oppbppd1/biopesticides/contacts\\_bppd.htm](http://www.epa.gov/oppbppd1/biopesticides/contacts_bppd.htm)].

When a brand, trade, or proprietary name of an inert ingredient is listed on a CSF, additional information such as an alternate name of the inert, CAS number or other information [link to <http://www.epa.gov/opprd001/inerts/tips.pdf>] must also be included to enable the Agency to determine if it has been approved. Each component of an inert mixture (including a fragrance) must be identified. In some cases, the supplier of the mixture or fragrance may need to provide this information to the Agency. Prior to the Agency's receipt of an application, applicants must arrange with a proprietary mixture or fragrance supplier to provide the component information to the Agency or promptly upon EPA's request. If the inert ingredients in a proprietary blend (including fragrances) cannot or are not identified or provided within the 21-day content review period, the Agency will reject the application.

During the 21 day content review, applicants should submit information to the individual identified by the Agency when the applicant is informed of an unapproved inert.

### **Unapproved Inerts Identified on CSFs**

#### **All applications except conventional new products and PIPs**

Once an unapproved inert is identified on a CSF, the Agency will contact the applicant with the following options:

1. Correct the application by, for instance, correcting the inert's identity or CAS number, providing documentation that the inert has been approved, or removing the unapproved inert from the CSF or replacing it with one that is approved for the application's uses; or
2. Submit the information and data needed for the Agency to approve the unapproved inert. If this option is selected and implemented, the Agency may request an extension in the PRIA decision review timeframe to accommodate the inert review/approval process;

3. Withdraw the application (the Agency retains 25% of the full fee for the fee category estimated); or

If none of these options is selected and implemented by the applicant within the 21 day content review period, the Agency will reject the application and retain 25% of the full fee of the category identified.

#### Conventional New Product Applications

When the Registration Division identifies an unapproved inert on a CSF with an application for a new product that the applicant has not identified as requiring an inert approval (R311, R312 or R313), it will contact the applicant with the following options:

1. Correct the application by, for instance, correcting the inert's identity or CAS number, providing documentation that the inert has been approved, or removing the unapproved inert from the CSF or replacing it with one that is approved for the application's uses; or
2. Submit the information and data needed for the Agency to approve the unapproved inert, including any required petition to establish or amend a tolerance or exemption from a tolerance. (This option may change the PRIA category for the application, which could require a longer decision review time and a larger fee. If additional fees are due, they must be received by the Agency within the 21 day content review period.)
3. Withdraw the application (the Agency retains 25% of the full fee for the fee category estimated); or

If none of the above options is selected and implemented during the 21-day content-review period, the Agency will reject the application and retain 25% of the appropriate fee for the new product-inert approval category.

#### PIP Applications

When the Biopesticide and Pollution Prevention Division identifies an unapproved inert on a PIP CSF and a request to approve the inert does not accompany the application, it will contact the applicant with the following options:

1. Correct the application by, for instance, correcting the spelling or name of the inert to that in 40 CFR 174, or providing documentation that the inert has been approved; or
2. Submit the information and data needed for the Agency to approve the unapproved inert. If an inert ingredient tolerance exemption petition is required, the petition must be received by the Agency and the B903 fee paid within the 21 day period. If this option is selected and implemented, the Agency will discuss harmonizing the timeframe for both actions.

3. Withdraw the application (the Agency retains 25% of the full fee for the fee category estimated); or

If none of the above options is selected and implemented during the 21 day content review period, the Agency will reject the application and retain 25% of the fee.

B. A policy on documentation of offers to pay is still being developed, however, for a me-too or fast track (similar/identical) new product, R300 or A530, an application without the necessary authorizations of offers to pay will be placed into either R301 or A531. The Agency recommends that authorizations of offers to pay be submitted with other PRIA applications to avoid delays in the Agency's decision.

C. Biopesticide applicants are advised to contact the Agency and discuss study waivers prior to submitting their application to the Agency. Documentation of such discussions should be submitted with the study waiver.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

November 12, 2010

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

OPP Decision Number: D-441990  
EPA File Symbol or Registration Number: 83222-30  
Product Name: CLETHODIM 2 EC HERBICIDE  
EPA Receipt Date: 10-Nov-2010  
EPA Company Number: 83222  
Company Name: J. OLIVER PRODUCTS, LLC

LAWRENCE A. MILLER  
BIOLOGIC, INC.  
J. OLIVER PRODUCTS, LLC  
115 OBTUSE HILL ROAD  
BROOKFIELD, CT 06804-

SUBJECT: Receipt of Registration Amendment Subject to Registration Service Fee

Dear Registrant:

The Office of Pesticide Programs has received your amendment and certification of payment. If you submitted data with this application, the results of the PRN-86-5 screen will be communicated separately. During the administrative screen, the Office of Pesticide Programs has determined that this Action is subject to a Pesticide Registration Service Fee as defined in the Pesticide Registration Improvement Act.

The Action has been identified as Action Code: R340

NON-FAST-TRACK (INCLUDES CHANGES TO PRECAUTIONARY LABEL  
STATEMENTS;SOURCE CHANGES TO AN UNREGISTERED SOURCE);

No additional payment is due at this time.

If you have any questions, please contact the Pesticide Registration Service Fee  
Ombudsman at (703) 308-9362.

Sincerely,

*Peresa Downs*  
Front End Processing Staff

Information Technology & Resources Management Division

# Fee for Service

{885510~

This package includes the following

- ☐ New Registration
- ☒ Amendment

☒ Studies?      ☐ Fee Waiver?

☐ volpay    % Reduction: \_\_\_\_

for Division

- ☐ AD
- ☐ BPPD
- ☒ RD

Risk Mgr.

23

Receipt No.

S-

885510

EPA File Symbol/Reg. No.

83222-30

Pin-Punch Date:

11/10/2010

☐ This item is NOT subject to FFS action.

## Action Code:

Requested:

R340

Granted:

R340

Amount Due: \$ 3617<sup>00</sup>

## Parent/Child Decisions:

☒ Inert Cleared for Intended Use

☐ Uncleared Inert in Product

Reviewer:

*[Signature]*

Date:

11/12/10

Remarks:

# Receipt for Section 3

S: 885510

Resubmission: ☐ Yes ☒ No

Regulatory Type: Product Registration - Section 3

Fee For Service: ☐ Yes ☒ No

Application Type: Amendment

Billable: ☒ Yes ☐ No

Company: 83222 J. OLIVER PRODUCTS, LLC

V

Print Letter

Enter More Information

Tracking

Risk Manager: Registration Division, Risk Management Team 29

Product #: 83222-30 Product Name: CLETHODIM 2 EC HERBICIDE

Override#:

Me Too

Me Too

Section3: 59639-3

Product Name: SELECT 2EC HERBICIDE

Application Date: 25-Oct-2010

OPP Rec'd Date: 10-Nov-2010

Front End Date: 12-Nov-2010

Risk Manager Send Date:

FFS Due Date:

Negotiated Due Date:

OPP Target Date:

Fast Track: ☐

New Ingredient: ☐

Receipt Description:

Amendment to change the registration

New Ingredient

Request Date:

New Ingredient

Received Date:

Form A: ☐

Signature Date:

Form B: ☐

Signature Date:

Receipt Content

Study

CSF

View/Edit

**From:** [paygovadmin@mail.doc.twai.gov](mailto:paygovadmin@mail.doc.twai.gov)  
**Sent:** Tuesday, November 09, 2010 11:34 AM  
**To:** [jmiller@biologicconsulting.com](mailto:jmiller@biologicconsulting.com)  
**Subject:** Pay.Gov Payment Confirmation

Your transaction has been successfully completed.

Application Name: PRIA Service Fees  
Pay.gov Tracking ID: 251RSN2I  
Agency Tracking ID: 74150992979

Decision Number:  
Registration Number: 83222-30  
Company Name: J. Oliver Products, LLC  
Company Number: 83222  
Action Code: R340

The image displays a variety of musical notation. At the top, there are several short musical phrases, some consisting of a single note with a flag, and others with multiple notes. Below these, there are more complex examples, including a large, multi-staff musical score. This score features a large, ornate initial 'C' and is filled with numerous notes, rests, and other musical symbols. The notation is dense and appears to be a full page of a musical manuscript.





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

DEC 23 2010

Ms. Jane Miller  
Agent for J. Oliver Products, LLC  
115 Obtuse Hill  
Brookfield, CT 06804

Subject: Label Notification  
EPA Reg. N. 83222-30  
Warthog 2 EC Herbicide

Dear Ms. Miller:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 dated 8/6/10 for **EPA Registration 83222-30**. The Registration Division (RD) has conducted a review of this request for applicability under PRN 98-10 and finds that the label changes requested (alternate brand name Warthog 2 EC Herbicide and new container size of 2.5 gallons) fall within the scope of PRN 98-10. The label has been date-stamped "Notification" and will be placed in our records.

If you have any questions, please contact me directly at 703-305-1243

Sincerely,

A handwritten signature in black ink, which appears to read "Kathryn V. Montague", is written over the typed name.

Kathryn V. Montague  
Product Manager 23  
Herbicide Branch  
Registration Division (7505P)  
Office of Pesticide Programs

NOTIFICATION

DEC 23 2010

# CLETHODIM 2 EC HERBICIDE

*[Alternate Brand Name – WARTHOG 2 EC Herbicide]*

Active Ingredient	By Wt.
*Clethodim.....	26.4%
Other Ingredients.....	73.6%
Total.....	100.0%

Contains Petroleum Distillates

\*(E)-2-[1-[[[(3-chloro-2-propenyl)oxy]imino]propyl]-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexen-1-one

Contains 2.0 lbs. clethodim per gal.

**KEEP OUT OF REACH OF CHILDREN**

## WARNING - AVISO

### SEE NEXT PAGE FOR ADDITIONAL PRECAUTIONARY STATEMENTS

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

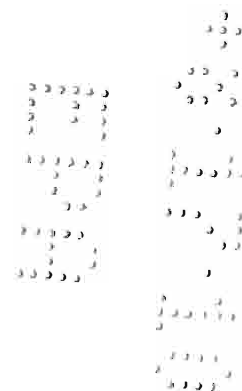
Manufactured for:

**J. Oliver Products, LLC**  
3187 Robertson Gin Road  
Hernando, MS 38632

Made in U.S.A.

EPA Reg. No. 83222-30  
EPA Est. No. 44616-MO-001

**NET CONTENTS: 1 GALLON  
2.5 GALLONS**



**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS & DOMESTIC ANIMALS  
WARNING**

Causes substantial but temporary eye irritation. Avoid contact with skin. Do not get in eyes, on skin, or on clothing. Harmful if swallowed or inhaled. Avoid breathing vapors or spray mist. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

<b>FIRST AID</b>	
<b>If in eyes:</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If on skin or clothing:</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If swallowed:</b>	<ul style="list-style-type: none"> <li>• Immediately call a poison control center or doctor.</li> <li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>• Do not give any liquid to the person.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If inhaled:</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>HOT LINE NUMBER</b> Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-892-0099 for emergency medical treatment information.	
<b>NOTE TO PHYSICIANS</b> Ingestion of this product or subsequent vomiting can result in aspiration of light hydrocarbon liquid, which can cause pneumonitis. If ingested, probable mucosal damage may contraindicate the use of gastric lavage.	

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category G on an EPA chemical resistance category selection chart.

**Applicators and other handlers must wear:** long-sleeved shirt and long pants, chemical-resistant gloves such as Barrier Laminate or Viton ≥ 14 mils, shoes plus socks, and protective eyewear.

**Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.** Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

### USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

### ENVIRONMENTAL HAZARDS

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply where runoff is likely to occur. Do not apply where weather conditions favor drift from areas treated. Do not contaminate water when disposing of equipment washwater or rinsate.

The use of this product may pose a hazard to the federally designated endangered species of Solano Grass and Wild Rice. Use of this product is prohibited in the following areas where the species are known to exist:

Solano Grass: Solano County, California: the vernal lakes area bounded by the Union Pacific Railroad and Hastings Road to the north, Highway 113 to the east, Highway 12 to the south, and Travis Air Force Base to the west.

Wild Rice: Hays County, Texas.

### PHYSICAL OR CHEMICAL HAZARDS

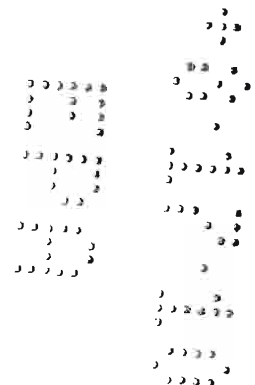
Do not use or store near heat or open flame.

### DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

**READ ENTIRE LABEL AND PAMPHLET. USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS, AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.**

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.



### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: coveralls, chemical-resistant gloves, such as Barrier Laminate or Viton  $\geq$  14 mils, shoes plus socks, and protective eyewear.

### NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standards for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forest, nurseries, or greenhouses.

Keep all unprotected persons out of operating areas, or vicinity where there may be drift. Do not enter treated areas without protective clothing until sprays have dried.

### DISCLAIMER, RISKS OF USING THIS PRODUCT, LIMITED WARRANTY AND LIMITATION OF LIABILITY

**IMPORTANT:** Read the entire Label including this Disclaimer, Risks of Using this Product, Limited Warranty, and Limitation of Liability before using this product. If the terms are not acceptable THEN DO NOT USE THE PRODUCT; rather, return the unopened product within 15 days of purchase for a refund of the purchase price.

#### RISKS OF USING THIS PRODUCT

The Buyer and User (referred to collectively herein as "Buyer") of this product should be aware that there are inherent unintended risks associated with the use of this product which are impossible to eliminate. These risks include, but are not limited to, injury to plants and crops to which this product is applied, lack of control of the target pests or weeds, resistance of the target pest or weeds to this product, injury caused by drift, and injury to rotational crops caused by carryover in the soil. Such risks of crop injury, non-performance, resistance, or other unintended consequences are unavoidable and may result because of such factors as weather, soil conditions, disease, moisture conditions, irrigation practices, condition of the crop at the time of application, presence of other materials either applied in the tank mix with this product or prior to application of this product, cultural practices or the manner of use or application, (or a combination of such factors) all of which are factors beyond the control of J. Oliver Products, LLC. The Buyer should be aware that these inherent unintended risks may reduce the harvested yield of the crop in all or a portion of the treated acreage, or otherwise affect the crop such that additional care, treatment and expense are required to take the crop to harvest. If the Buyer chooses not to accept these risks, THEN THIS PRODUCT SHOULD NOT BE APPLIED. By applying this product Buyer acknowledges and accepts these inherent unintended risks AND TO THE FULLEST EXTENT ALLOWED BY LAW, AGREES THAT ALL SUCH RISKS ASSOCIATED WITH THE APPLICATION AND USE ARE ASSUMED BY THE BUYER.

J. Oliver Products, LLC shall not be responsible for losses or damages (including, but not limited to, loss of yield, increased expenses of farming the crop or such incidental, consequential or special damages that may be claimed) resulting from use of this product in any manner not set forth on the label. Buyer assumes all risks associated with the use of this product in any manner or under conditions not specifically directed or approved on the label.

#### LIMITED WARRANTY

J. Oliver Products, LLC warrants only that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the label, under average use conditions, when used strictly in accordance with the label and subject to the Risks of Using This Product as described above. To the extent consistent with applicable law AND AS SET FORTH ABOVE, J. OLIVER PRODUCTS, LLC MAKES NO OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED. No agent or representative of J. Oliver Products, LLC or Seller is authorized to make or create any other express or implied warranty.

#### LIMITATION OF LIABILITY

To the fullest extent allowed by law, J. Oliver Products, LLC or Seller is not liable for any incidental, consequential, indirect or special damages resulting from the use or handling of this product. The limitation includes, but is not limited to, loss of yield on all or any portion of the treated acreage, increased care, treatment or other expenses required to take the crop to harvest, increased finance charges or altered finance ratings, emotional or mental distress and/or exemplary damages. TO THE FULLEST EXTENT ALLOWED BY LAW, THE EXCLUSIVE REMEDY OF THE BUYER, AND THE EXCLUSIVE MAXIMUM LIABILITY OF J. OLIVER PRODUCTS, LLC OR SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT SHALL BE THE RETURN OF THE PURCHASE PRICE OF THIS PRODUCT OR, AT THE ELECTION OF J. OLIVER PRODUCTS, LLC OR SELLER, THE REPLACEMENT OF THE PRODUCT.

#### PROMPT NOTICE OF CLAIM

To the extent consistent with applicable law allowing such requirements J. Oliver Products, LLC must be provided notice as soon as Buyer has reason to believe it may have a claim, but in no event later than twenty-one days from date of planting, or twenty-one days from the date of application, whichever is latter, so that an immediate inspection of the affected property and growing crops can be made.

To the extent consistent with applicable law if Buyer does not notify J. Oliver Products, LLC of any claims in such period, it shall be barred from obtaining any remedy.

#### NO AMENDMENTS

J. Oliver Products, LLC and Seller offer this product, and Buyer accepts it, subject to the foregoing Disclaimer, Risks of Using This Product, Limited Warranty and Limitation of Liability, which may not be modified by any oral or written agreement.

#### TANK MIXES

**NOTICE:** Tank mixing or use of this product with any other product which is not specifically and expressly authorized by the label shall be the exclusive risk of user, applicator and/or application advisor.

Read and follow the entire label of each product to be used in the tank mix with this product.

**THE FOLLOWING STATEMENT ON CHEMIGATION WILL BE USED ONLY IF A SUPPLEMENTAL LABEL IS CREATED.**

#### CHEMIGATION

[Do not apply this product through any irrigation system unless the supplemental labeling on chemigation is followed. Refer to supplemental labeling entitled, "Application of CLETHODIM [WARTHOG] 2 EC Onions (dry bulbs and green) and Garlic by Chemigation", for use directions for chemigation.]

May be applied to onions and garlic by sprinkler irrigation systems. Do not apply by chemigation to any other crop, or to this crop using any other type of irrigation system.

#### USE INFORMATION

**FOR USE ON:** Alfalfa, Asparagus, Bean (dry) and Pea (shelled)<sup>1</sup>, Bean and Pea (succulent)

shelled)<sup>2</sup>, Broccoli, Cabbage, Canola\*, Carrot, Cauliflower (and other Head and Stem Brassica Vegetables)<sup>3</sup>, Celery, Clover (grown in Idaho, Oregon and Washington only), Conifers, Cotton, Cranberry, Cucumber, Eggplant (and other Fruiting Vegetables)<sup>4</sup>, Fallow Land (and other non-producing agricultural areas), Flax\*, Garden Beet, Garlic, Herbs<sup>5</sup>, Hops, Horseradish (and other Root Vegetables)<sup>6</sup>, Legume Vegetables (edible podded)<sup>7</sup>, Lettuce, Head and Leaf (and other leafy greens)<sup>8</sup>, Melons (including Cantaloupes and Watermelons)<sup>9</sup>, Mint, Mustard Greens (and other leafy brassica greens)<sup>10</sup>, Mustard Seed\*, Non-Bearing Food Crops, Non-Crop or Non-Planted Areas, Onions (dry bulb and green), Ornamentals, Peanut (including perennial), Peppers (bell and non-bell), Potato, Radish, Rhubarb (and other Leaf Petioles)<sup>11</sup>, Safflower, Sesame, Shallots (dry bulbs and green), Squash (including Pumpkins)<sup>9</sup>, Soybeans, Strawberry, Sugar Beet, Sunflower, Sweet Potato, Tomato and Yam (and other Tuberous and Corm Vegetables)<sup>12</sup>.

\*Not for use in California

- 1 Other Bean (Dry) and Pea (Shelled) crops approved for use with CLETHODIM [WARTHOG] 2 EC include: Bean (*Lupinus* spp.), grain, sweet, white and white sweet; Bean (*Phaseolus* spp.), field, kidney, lima (dry), navy, pinto and tepary; Bean (*Vigna* spp.), adzuki bean, black-eyed pea, catjang, cowpea, crowder pea, moth bean, mung bean, rice bean, Southern pea, urd bean, broad (dry), chickpea (garbanzo), guar, lablab bean and lentil; Pea (*Pisum* spp.), field and pigeon
- 2 Other Bean and Pea (Succulent Shelled) crops approved for use with CLETHODIM [WARTHOG] 2 EC includes: Bean (*Lupinus* spp.), grain, sweet, white and white sweet; Bean (*Phaseolus* spp.), field, kidney, lima (dry), navy, pinto and tepary; Bean (*Vigna* spp.), adzuki bean, black-eyed pea, catjang, cowpea, crowder pea, moth bean, mung bean, rice bean, Southern pea, urd bean, broad (dry), chickpea (garbanzo), guar, lablab bean and lentil; Pea (*Pisum* spp.), field and pigeon
- 3 Other head and stem brassica vegetables approved for use with CLETHODIM [WARTHOG] 2 EC include: Chinese broccoli, Brussels sprouts, Chinese (napa) cabbage, Chinese mustard, cavalo broccolo and kohlrabi.
- 4 Other Fruiting Vegetables (except tomato) approved for use with CLETHODIM [WARTHOG] 2 EC include: eggplant, groundcherry, pepino, peppers (all) and tomatillo.
- 5 Other Herb crops approved for use with CLETHODIM [WARTHOG] 2 EC include: angelica, balm, basil, borage, burnet, camomile, catnip, chervil (dried), chive, Chinese chive, clary, coriander (leaf), costmary, culantro (leaf), curry (leaf), dill (dillweed), horehound, hyssop, lavender, lovage (leaf), marigold, marjoram (*origanum* spp.), nasturtium, parsley (dried), pennyroyal, rosemary, rue, sage and savory, summer and winter.
- 6 Other root vegetables approved for use with CLETHODIM [WARTHOG] 2 EC include: burdock, edible; celeriac; chervil, turnip-rooted; chicory; ginseng; parsley, turnip-rooted; parsnip; radish, oriental; rutabaga; salsify; salsify, black; salsify, Spanish; skirret and turnip.
- 7 Other Edible Podded Legume Vegetable crops approved for use with CLETHODIM [WARTHOG] 2 EC include: Bean (*Phaseolus* spp.), runner, snap and wax; Bean (*Vigna* spp.), asparagus, Chinese longbean, moth, yardlong, jackbean; Pea (*Pisum* spp.), dwarf, edible-pod, snow, sugar snap, pigeon and sword bean.
- 8 Other Leafy Greens crops approved for use with CLETHODIM [WARTHOG] 2 EC include: amaranth (Chinese spinach, leafy amaranth and tampala), arugula (roquette), chervil, chrysanthemum (edible-leaved and garland), corn salad, cress (garden, yellow rock and winter), dandelion, dock (sorrel), endive (escarole), lettuce (head and leaf), orach, parsley, purslane (garden and winter), radicchio (red chicory), spinach (New Zealand and Vine (Indian and malabar).
- 9 Other cucurbit crops approved for use with CLETHODIM [WARTHOG] 2 EC include: Chayote (fruit), Chinese Wax Gourd, Citron Melon, Edible Gourd, Gherkin and Muskmelons (all) including Honeydew Melon.
- 10 Other leafy brassica greens approved for use with CLETHODIM [WARTHOG] 2 EC include: broccoli, raab, Chinese (bok choy) cabbage, collards, kale, mizuna, mustard greens, mustard spinach, rape greens and turnip greens.
- 11 Other leaf petiole crops approved for use with CLETHODIM [WARTHOG] 2 EC include: cardoon, celtuce, Chinese celery, Florence fennel, and Swiss chard.
- 12 Other tuber and corm vegetables approved for use with CLETHODIM [WARTHOG] 2 EC include: arracacha, arrowroot, Chinese artichoke, Jerusalem artichoke, edible burdock, edible cassava, bitter and sweet cassava, chayote (root), chufa, dasheen (taro), ginger, leren, tanier, turmeric and bean yam.

CLETHODIM [WARTHOG] 2 EC is not recommended for use on vegetable crops being grown for seed production unless specific use directions are provided.

CLETHODIM [WARTHOG] 2 EC is a selective postemergence herbicide for control of annual and perennial grasses.

CLETHODIM [WARTHOG] 2 EC does not control sedges or broadleaf weeds.

Repeated use of CLETHODIM [WARTHOG] 2 EC (or similar postemergence grass herbicides with the same mode of action) may lead to the selection of naturally occurring biotypes that are resistant to these products in some grass species.

If poor performance occurs and cannot be attributed to adverse weather or application conditions, a resistant biotype may be present. This is most likely to occur in fields where other control strategies such as crop rotation, mechanical removal, and other classes of herbicides are not used from year to year.

Do not allow CLETHODIM [WARTHOG] 2 EC to come in contact with desirable grass crops such as corn, rice, sorghum, small grains, or turf, as these and other grass crops will be injured or killed. Minor leaf spotting may occur on treated plants under certain environmental conditions. New foliage is not affected.

#### **Control Symptoms**

Treated grass weeds show a reduction in vigor and growth. Early chlorosis/necrosis of younger plant tissue is followed by a progressive collapse of the remaining foliage. Symptoms will generally be observed in 7 to 14 days after application, depending on grass species treated and environmental conditions.

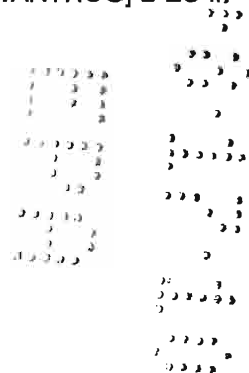
### **APPLICATION INFORMATION**

#### **Timing of Applications**

Apply CLETHODIM [WARTHOG] 2 EC postemergence to actively growing grasses according to rate table recommendations. Applications made to grass plants stressed by insufficient moisture, or hot or cold temperatures, or to grass plants exceeding recommended growth stages may result in unsatisfactory control. Do not apply under these conditions.

In arid regions where irrigation is used to supplement limited rainfall, CLETHODIM [WARTHOG] 2 EC should be applied as soon as possible, after irrigation (within 7 days). In arid regions, a second application of CLETHODIM [WARTHOG] 2 EC will generally provide more effective control of perennial grass weeds than a single application. Make second application to actively growing grass 2 to 3 weeks after emergence of new growth.

Cultivation of treated grasses 7 days prior to or within 7 days after application of CLETHODIM [WARTHOG] 2 EC may reduce weed control. DO NOT APPLY CLETHODIM [WARTHOG] 2 EC if, rainfall is expected within one hour, since control may be reduced.





## ADDITION OF ADJUVANT OR CROP OIL CONCENTRATE

CROP	ADJUVANT
Alfalfa, Cotton, Bean (dry) & Pea (shelled), Edible Podded Legume Vegetables, Peanuts (including perennial), Potato, Soybean, Bean & Pea (succulent shelled), Sugar Beet and Sunflower	Always use a crop oil concentrate* at 1.0 qt./A by ground or 1 % v/v (but not less than 1 pt./A) in the finished spray volume by air.  1 to 2 qts./A of liquid fertilizer (10-34-0, 28%N or 32%N), or an equivalent amount (2.5 to 4.0 lbs./A) of spray grade ammonium sulfate (AMS) may be added to CLETHODIM [WARTHOG] 2 EC applications, in addition to the recommended rate of crop oil concentrate. The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
Asparagus, Canola, Carrot, Clover, Cranberry, Cucurbits, Flax, Fruiting Vegetables (except Tomato), Garden Beet, Garlic, Head & Stem Brassica Vegetables, Herbs, Hops, Leaf Petioles, Leafy Brassica Greens, Leafy Greens, Mint, Mustard Seed, Onion (Dry Bulb & Green), Root Vegetables, Safflower, Sesame, Shallots (Dry Bulb & Green), Strawberry, Sweet Potato (Yam & other Tuberous and Corm Vegetables except Potato) and Tomato	Always use a crop oil concentrate at 1% v/v in the finished spray volume unless tank mix instructions indicate otherwise.  Addition of liquid fertilizer is not recommended for these crops.
Non-Bearing Food Crops, Ornamental Plants,	Add a non-ionic surfactant containing at least 80% active ingredient at the rate of 1 pt. per 50 gals. (0.25% v/v). Use of crop oil concentrate is not recommended since it may injure flowers and foliage.
Conifer Trees, Fallow Land (and other non-producing agricultural areas), and Non-Crop or Non-planted Areas	Always use a crop oil concentrate containing at least 15% emulsifier at 1% v/v (but not less than 1 pt./A) in the finished spray volume.

\*Acceptable crop oil concentrates would be those that contain a minimum of 80% oils and 15% emulsifier. A crop oil concentrate must contain either a petroleum or vegetable oil base and must meet all the following criteria: be non phytotoxic, contain only EPA-exempt ingredients, provide good mixing quality, and be successful in local experience. Highly refined vegetable oils have proven more satisfactory than unrefined vegetable oils.

### Ground Application

Use of sufficient spray volumes and pressure is essential to ensure complete coverage. Use a minimum of 5 gals. and a maximum of 40 gals. of spray solution per acre. Under the following conditions a minimum of 10 gals. per acre is required: ultra narrow row cotton, narrow row soybeans, broadleaf herbicide tank mixes, perennial grasses, volunteer corn, drought or stress conditions, heavy grass pressure or when grasses are at or near maximum height. Failure to use a minimum of 10 gals. per acre under these conditions can result in poor coverage and reduced grass control requiring repeat applications. Spray pressures should reflect a minimum of 30 psi and a maximum of 60 psi at the nozzle. Do not use flood nozzles.

Applications to onions (dry bulbs and green), garlic, and shallots (dry bulbs and green) should be made in a minimum of 20 gals. of spray solution per acre.

### **Air Application**

Use a minimum of 3 gals. of spray solution per acre unless otherwise directed in this label. Increase spray volumes up to 10 gals. as grass or crop foliage becomes dense. For onions (dry bulbs and green), garlic, or shallots (dry bulbs and green): When applying by air do not exceed 8 fl. oz./A in a single application. In California, air applications to onions, garlic or shallots should be made in a minimum of 20 gals. of spray solution per acre. In states other than California, air application to onions, garlic, or shallots should be made in a minimum of 10 gals. of spray solution per acre.

**NOTE: Crop injury may occur when CLETHODIM [WARTHOG] 2 EC is applied to onions, garlic or shallots with aerial equipment.**

### **Spot Treatment**

When using hand sprayers or high volume sprayers utilizing hand guns, mix 1/4% to 1/2% (0.33 oz. to 0.65 oz. per gal.) CLETHODIM [WARTHOG] 2 EC and treat to wet vegetation, while not allowing runoff of spray solution. For uses requiring crop oil concentrate, include crop oil concentrate at 1% (1.3 oz. per gal.) by volume. For uses requiring non-ionic surfactant, include non-ionic surfactant at 1/4% (0.33 oz. per gal.) by volume.

**NOTE: If CLETHODIM [WARTHOG] 2 EC is applied as a spot treatment, care should be taken to not exceed the maximum rate allowed on a "per acre" basis or crop injury may occur.**

### **CHEMIGATION - ONION (Dry Bulb and Green) AND GARLIC SPRINKLER IRRIGATION APPLICATION**

**Do not apply CLETHODIM [WARTHOG] 2 EC by chemigation in the states of Idaho, Montana, Oregon and Washington.**

Apply CLETHODIM [WARTHOG] 2 EC at the high rate recommended for annual grasses (16 fl. oz. per acre) when the grass height is at the low end of the range (application to larger grasses may not provide adequate control). Add a crop oil concentrate containing at least 15% emulsifier at 1 quart per acre.

Apply CLETHODIM [WARTHOG] 2 EC in 0.1 to 0.2 acre-inch of water either at the end of a regular irrigation set or as a separate application not associated with a regular irrigation using the least amount of water that provides proper distribution and coverage. Application of more than label recommended quantities of irrigation water per acre may result in decreased product performance by removing the chemical from the zone of effectiveness. Use a metering device to inject the CLETHODIM [WARTHOG] 2 EC into the irrigation water at a constant flow. Constant agitation must be maintained in the chemical supply tank during the entire period of herbicide application. Inject the product with a positive displacement pump into the main line ahead of a right angle turn to ensure adequate mixing. Allow time for all lines to flush the herbicide through all nozzles before turning off irrigation water. To ensure the lines are flushed and free of remaining herbicide, a dye indicator may be injected into the lines to mark the end of the application period.

It is not recommended that CLETHODIM [WARTHOG] 2 EC be applied through any irrigation system connected to a public water system. Public water system means a system for the provision, to the public of piped water for human consumption, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

### **Use Precautions**

1. Apply this product only through sprinkler irrigation systems including center pivot, lateral, move, end tow, side (wheel) roll, travelers, big gun, solid set, or hand move. Do not apply

this product through any other type of irrigation system.

2. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop may result from non-uniform distribution of treated water.
3. If you have any questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
4. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the label-prescribed safety devices for public water supplies are in place.
5. A person knowledgeable of the chemigation system and responsible for its operation or under supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.
6. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
7. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
8. The pesticide injection pipeline must also contain a functional, normally closed solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
9. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
10. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
11. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
12. Do not apply when wind speed favors drift beyond the area intended for treatment.

## RESTRICTIONS AND LIMITATIONS

- Do not apply if rain is expected within 1 hour of application as control may be unsatisfactory.
- Do not apply a postemergence broadleaf herbicide within one day following application of CLETHODIM [WARTHOG] 2 EC or reduced grass control may result.
- CLETHODIM [WARTHOG] 2 EC is not recommended for use on vegetable crops being grown for seed production unless specific use directions are provided.
- For canola, do not apply more than 6 fl. oz. of CLETHODIM [WARTHOG] 2 EC per acre per season. For clover, flax, mustard seed and radish crops, do not apply more than 16 fl. oz. of CLETHODIM [WARTHOG] 2 EC (0.25 lb. ai) per acre per season. For all other crops, do not apply more than 32 fl. oz. of CLETHODIM [WARTHOG] 2 EC (0.50 lb. ai) per acre per season. Application on Long Island, New York, is restricted to no more than 16 fl. oz. of CLETHODIM [WARTHOG] 2 EC (0.25 lb. ai) per acre per season.
- Do not apply more than 8 fl. oz./A of CLETHODIM [WARTHOG] 2 EC **per application** to the following crops: asparagus, brassica vegetables (head and stem), bean (succulent shelled), carrot, cranberry, cucurbits, flax, fruiting vegetables (except tomato), garden beet, green onion, herbs, hops, leaf petioles, leafy brassica greens, leafy greens, legume vegetables (edible podded), non-bearing food crops, pea (shelled), pea (succulent shelled), root vegetables, safflower, sesame and strawberry. Do not apply more than 6 fl. oz./A of CLETHODIM [WARTHOG] 2 EC per application to canola or mustard seed. For all other crops, do not apply more than 16 fl. oz. of CLETHODIM [WARTHOG] 2 EC (0.25 lb. ai) per acre per application. **Exceeding these recommendations may result in unacceptable crop injury.**
- Do not apply under conditions of stress. Applying CLETHODIM [WARTHOG] 2 EC under conditions that do not promote active grass growth will reduce herbicide effectiveness. These conditions include drought, excessive water, extremes in temperature, low humidity and grasses either partially controlled or stunted from prior pesticide applications. Grasses under these kinds of stressful conditions will not absorb and translocate CLETHODIM [WARTHOG] 2 EC effectively, and will be less susceptible to herbicide activity.
- Optimal perennial grass control can be obtained if rhizomes or stolons are cut up by preplant tillage practices, (discing, plowing, etc.) to stimulate maximum emergence of grass shoots. Cultural practices, such as continuous no-tillage in which the perennial grass rhizomes or stolons are not cut up, result in a very staggered, non-uniform weed emergence. Due to this non-uniform weed emergence, no fewer than 2 CLETHODIM [WARTHOG] 2 EC applications per season per year are recommended at the appropriate weed-growth stage rate under continuous no-till conditions.
- Grass crops such as corn, rice, sorghum, small grains, or turf, etc. are highly sensitive to CLETHODIM [WARTHOG] 2 EC.
- While all the vegetable crops on this label have been tested and are tolerant to CLETHODIM [WARTHOG] 2 EC, not all specialty varieties of these crops have been tested. It is advised that, before applying CLETHODIM [WARTHOG] 2 EC to specialty varieties of vegetable crops on this label, crop tolerance be investigated first using a small section of the field. It is possible that injury symptoms can occur. Symptoms may appear as leaf speckling or stunting.
- Always read and follow the restrictions and limitations for all products whether used alone

or in a tank mix. The most restrictive labeling of any product used applies in tank mixtures, including all crop rotational and other crop restrictions.

- Tank mixes of CLETHODIM [WARTHOG] 2 EC and broadleaf herbicides may result in reduced grass control. If grass regrowth occurs, an additional application of CLETHODIM [WARTHOG] 2 EC may be necessary. **AVOID SPRAY DRIFT.**
- Do not allow spray from ground or aerial equipment to drift onto adjacent land or crops. When drift may be a problem, do everything possible to reduce spray drift, including:
  1. Do not spray if wind speeds are or become excessive.
  2. Do not spray if wind speed is 10 mph or greater. If sensitive crops or plants are downwind, extreme caution must be used under all conditions.
  3. Do not spray if winds are gusty.
  4. Use extreme caution when conditions are favorable for drift (high temperatures, drought, low relative humidity), especially when sensitive plants are located nearby.
  5. Do not apply when a temperature inversion exists. If inversion conditions are suspected, consult with local weather services before making an application.
  6. Further reductions in drift can be obtained by:
    - a) Using large droplet size sprays. Do not use nozzles that produce small droplets. Orient nozzles downward and slightly backward as needed to reduce drift for ground applications.
    - b) Orienting nozzles straight back with the windstream, using straight stream orifices for aerial applications. Use the lowest number of nozzles practical with the largest possible orifice size to obtain the minimum 3 GPA volume. Application height and boom length should be set according to manufacturer's instructions to minimize drift.
    - c) Increasing the volume of spray mixture (for example, a minimum of 10 GPA for ground applications) by using higher flow rate nozzles. Using lower pressure with the appropriate nozzle to obtain higher volumes will also reduce drift.
    - d) Applying as close to target plants as practical while maintaining a good spray pattern for adequate coverage.

**Do not apply under conditions involving possible drift to food, forage or other plantings that might be damaged or the crops thereof rendered unfit for sale, use or consumption.**

**CROP SPECIFIC RESTRICTIONS AND LIMITATIONS FOR CLETHODIM [WARTHOG] 2 EC**

Crops <sup>(1)</sup>	Minimum Time From Application to Harvest (PHI)	Use Rates Per Acre	Crop Oil Concentrate Rates Per Acre <sup>(2)</sup>	Special Use Instructions
Alfalfa including: Sainfoin Holy Clover Birdsfoot trefoil <sup>(3)</sup>	15 days before grazing, feeding or harvesting (cutting) for forage or hay	6-16 fl. oz. <sup>(4)</sup>	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air <sup>(5)</sup>	Refer to tank mix partners for feeding, grazing and harvesting restrictions. <sup>(5,6)</sup>  The addition of AMS has shown improved grass control for difficult to control species including:

**CROP SPECIFIC RESTRICTIONS AND LIMITATIONS FOR CLETHODIM [WARTHOG] 2 EC**

<b>Crops<sup>(1)</sup></b>	<b>Minimum Time From Application to Harvest (PHI)</b>	<b>Use Rates Per Acre</b>	<b>Crop Oil Concentrate Rates Per Acre<sup>(2)</sup></b>	<b>Special Use Instructions</b>
				quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
<b>Asparagus</b>	1 day	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Bean, Dry</b> including: Bean ( <i>Lupinus</i> spp.) Grain Sweet White White Sweet Bean ( <i>Phaseolus</i> spp.) Field Kidney Lima (dry) Navy Pinto Tepary Bean ( <i>Vigna</i> spp.) Adzuki Bean Black-eyed Pea Catjang Cowpea Crowder Pea Moth Bean Mung Bean Rice Bean Southern Pea Urd Bean Broad (dry) Chickpea (garbanzo) Guar Lablab Bean Lentil	30 days	6-16 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	Do not apply more than 16 fl. oz./A per application.  For repeat applications make on a minimum of a 14 day interval.  Refer to appropriate Table for reduced rate recommendations for the control of small annual grasses.  The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals and volunteer corn.
<b>Bean, Succulent Shelled</b> including: Bean ( <i>Phaseolus</i> spp.) Broad Bean (succulent) Lima Bean (green) Bean ( <i>Vigna</i> spp.) Black-eyed Pea Cowpea Southern Pea	21 days	6-8 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	Refer to appropriate Table for reduced rate recommendations for the control of small annual grasses.  Do not apply more than one (1) application per acre per season.  The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals and volunteer corn.
<b>Beet, Garden</b>	30 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a

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<b>Crops<sup>(1)</sup></b>	<b>Minimum Time From Application to Harvest (PHI)</b>	<b>Use Rates Per Acre</b>	<b>Crop Oil Concentrate Rates Per Acre<sup>(2)</sup></b>	<b>Special Use Instructions</b>
				minimum of a 14 day interval.
<b>Brassica Vegetables, Head &amp; Stem</b> including: Broccoli Brussels sprouts Cabbage Cauliflower	30 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application. For repeat applications make on a minimum of a 14 day interval.
<b>Canola</b>	70 days	4-6 fl. oz.	1% v/v in the finished spray volume.	Do not apply after crop has begun bolting. Crop injury may occur when CLETHODIM [WARTHOG] 2 EC is applied during the bloom period. Do not apply more than 6 oz./A in a single application. Do not exceed 6 fl. oz./A in a season.
<b>Carrot</b>	30 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application. For repeat applications make on a minimum of a 14 day interval.
<b>Clover</b>	15 days before grazing, feeding, or harvesting (cutting) for forage or hay	6-16 fl. oz.	1% v/v in the finished spray volume.	For use on clover grown in the states of Idaho, Oregon and Washington only. Do not exceed 16 fl. oz./A in a season.
<b>Cotton</b>	60 days	6-16 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	Do not graze treated fields or feed treated forage or hay to livestock. The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
<b>Cranberry</b>	30 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application. Do not apply between the "hook" stage and full fruit set. For repeat applications make on a minimum of a 14 day interval.
<b>Cucurbits</b> including: Chayote (fruit) Chinese Wax Gourd Citron Melon Cucumber Gherkin Gourd, Edible Muskmelons (all) including: Cantaloupes Honeydew Melon Pumpkin Squash (all) Watermelon	14 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application. For repeat applications make on a minimum of a 14 day interval.

**CROP SPECIFIC RESTRICTIONS AND LIMITATIONS FOR CLETHODIM [WARTHOG] 2 EC**

<b>Crops<sup>(1)</sup></b>	<b>Minimum Time From Application to Harvest (PHI)</b>	<b>Use Rates Per Acre</b>	<b>Crop Oil Concentrate Rates Per Acre<sup>(2)</sup></b>	<b>Special Use Instructions</b>
<b>Fallow Land</b> <b>Conifer Trees</b> (and other non-producing agricultural areas) <b>Non-Crop or Non-Planted Areas</b>	N/A	6-16 fl. oz.	1% v/v (but not less than 1 pt./A) in the finished spray volume using a crop oil concentrate containing at least 15% emulsifier.	Do not plant any crop for 30 days after application unless clethodim is registered for use in that crop.
<b>Flax</b>	60 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Apply prior to bloom. Crop injury may occur when CLETHODIM [WARTHOG] 2 EC is applied during the bloom period.  Do not apply more than 8 fl. oz./A in a single application.  Do not exceed 16 fl. oz./A in a season.
<b>Fruiting Vegetable</b> (except Tomato) including: Eggplant Groundcherry Pepino Peppers (all) Tomatillo	20 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Herbs including:</b> Angelica Balm Basil Borage Burnet Camomile Catnip Chervil (dried) Chive Chive, Chinese Clary Coriander (leaf) Costmary Culantro (leaf) Curry (leaf) Dill (dillweed) Horehound Hyssop Lavender Lovage (leaf) Marigold Marjoram ( <i>Origanum</i> spp.) Nasturtium Parsley (dried) Pennyroyal Rosemary Rue Sage Savory, Summer and Winter	14 days	6-8 fl. oz.	1% v/v in the finished spray volume.	CLETHODIM [WARTHOG] 2 EC has not been tested on all herbs, and herb varieties. It is the responsibility of the user to test CLETHODIM [WARTHOG] 2 EC on a small portion of the crop to be treated before treating the entire field.  Crop tolerance should be verified to CLETHODIM [WARTHOG] 2 EC on a small area of the herb crop, at the desired CLETHODIM [WARTHOG] 2 EC rate and with the same crop oil concentrate that will be used on the herb field. If no crop response is evident seven (7) days after treatment, CLETHODIM [WARTHOG] 2 EC may be used on the entire field at the rate tested and with the same crop oil used in the tolerance test.  Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.



**CROP SPECIFIC RESTRICTIONS AND LIMITATIONS FOR CLETHODIM [WARTHOG] 2 EC**

<b>Crops<sup>(1)</sup></b>	<b>Minimum Time From Application to Harvest (PHI)</b>	<b>Use Rates Per Acre</b>	<b>Crop Oil Concentrate Rates Per Acre<sup>(2)</sup></b>	<b>Special Use Instructions</b>
<b>Hops</b>	21 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.

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<b>Crops<sup>(1)</sup></b>	<b>Minimum Time From Application to Harvest (PHI)</b>	<b>Use Rates Per Acre</b>	<b>Crop Oil Concentrate Rates Per Acre<sup>(2)</sup></b>	<b>Special Use Instructions</b>
<b>Leaf Petioles</b> including: Cardoon Celery Celtuce Chinese Celery Fennel, Florence (finocchio) Rhubarb Swiss Chard	30 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Leafy Brassica Greens</b> including: Broccoli Raab Cabbage, Chinese (bok choy) Collards Kale Mizuna Mustard Greens Mustard Spinach Rape Greens Turnip Greens	14 days	6-8 fl. oz.	1 % v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Leafy Greens</b> including: Amaranth Chinese Spinach Leafy Amaranth Tampala Arugula (roquette) Chervil Chrysanthemum, Edible-leaved Chrysanthemum, Garland Corn Salad Cress Garden Upland (yellow rock and winter) Dandelion Dock (sorrel) Endive (escarole) Lettuce, Head and Leaf Orach Parsley Purslane Garden Winter Radicchio (red chicory) Spinach New Zealand Vine (indian and malabar)	14 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.

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<b>Crops<sup>(1)</sup></b>	<b>Minimum Time From Application to Harvest (PHI)</b>	<b>Use Rates Per Acre</b>	<b>Crop Oil Concentrate Rates Per Acre<sup>(2)</sup></b>	<b>Special Use Instructions</b>
<b>Legume Vegetables, Edible Podded</b> including: Bean ( <i>Phaseolus</i> spp.) Runner Snap Wax Bean ( <i>Vigna</i> spp.) Asparagus Chinese Longbean Moth Yardlong Jackbean Pea ( <i>Pisum</i> spp.) Dwarf Edible-pod Snow Sugar Snap Pigeon Sword Bean	21 days	6-8 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	Do not apply more than 8 fl. oz./A in a single application.  Do not apply more than one (1) application per acre per season.  For peas apply before bloom, but no later than 21 days before harvest.  Refer to appropriate Table for reduced rate recommendations for the control of small annual grasses.  The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
<b>Mint</b>	21 days	6-16 fl. oz. <sup>(4)</sup>	1 qt. by ground or 1% v/v (but not less than 1 pt./A by air.)	Do not apply more than 16 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Mustard Seed</b>	75 days	4-6 fl. oz.	1% v/v in the finished spray volume.	Do not apply after crop has begun bolting. Crop injury may occur when CLETHODIM [WARTHOG] 2 EC is applied during the bloom period.  Do not apply more than 6 fl. oz./A in a single application.  Do not exceed 16 fl. oz./A in a season.
<b>Onion</b> (Dry Bulb Only) <b>Garlic</b> <b>Shallot</b> (Dry Bulb Only)	45 days	6-16 fl. oz. <sup>(7), (8)</sup>	1% v/v in the finished spray volume.	Minimum of 20 gals./A spray volume by ground in entire U.S.  Minimum of 20 gals./A spray volume by air in California. <sup>(9)</sup>  In states other than California, air applications to onions, garlic or shallots should be made in a minimum of 10 gals./A.
<b>Onion, Green</b> including: Green Eschalot Green Shallot Japanese Bunching Onion Leeks Scallion or Spring Onion	14 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.

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<b>Crops<sup>(1)</sup></b>	<b>Minimum Time From Application to Harvest (PHI)</b>	<b>Use Rates Per Acre</b>	<b>Crop Oil Concentrate Rates Per Acre<sup>(2)</sup></b>	<b>Special Use Instructions</b>
<b>Ornamentals</b>	N/A	6-16 fl. oz.	Use of crop oil concentrate is not recommended since it may injure flowers and foliage. See Special Use Instructions.	<p>Add a non-ionic surfactant containing at least 80% active ingredient at the rate of 1 pt. per 50 gals. (0.25% v/v).</p> <p>Sugar maples cannot be tapped for syrup within one year of CLETHODIM [WARTHOG] 2 EC application.</p> <p>Do not apply more than 8 fl. oz./A in a single application to non-bearing food crops.</p>
<b>Non-Bearing Food Crops</b>	N/A	6-8 fl. oz. <sup>(8)</sup>		
<b>Pea, Shelled</b> including: Pea ( <i>Pisum</i> spp.) Field Pigeon	30 days	6-8 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	<p>Do not apply more than 8 fl. oz./A per application.</p> <p>Do not apply more than one (1) application per acre per season.</p> <p>Apply before bloom but not later than 30 days prior to harvest. <sup>(10)</sup></p> <p>Refer to appropriate Table for reduced rate recommendations for the control of small annual grasses.</p> <p>The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals and volunteer corn.</p>
<b>Pea, Succulent Shelled</b> including: Pea ( <i>Pisum</i> spp.) English Pea Garden Pea Green Pea Pigeon Pea	21 days	6-8 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	<p>Do not apply more than 8 fl. oz./A per application.</p> <p>Do not apply more than one (1) application per acre per season.</p> <p>Apply before bloom but not later than 21 days prior to harvest. <sup>(10)</sup></p> <p>Refer to appropriate Table for reduced rate recommendations for the control of small annual grasses.</p> <p>The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals and volunteer corn.</p>
<b>Peanut (Including Perennial)</b>	40 days	6-16 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	<p>The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.</p>

**CROP SPECIFIC RESTRICTIONS AND LIMITATIONS FOR CLETHODIM [WARTHOG] 2 EC**

<b>Crops<sup>(1)</sup></b>	<b>Minimum Time From Application to Harvest (PHI)</b>	<b>Use Rates Per Acre</b>	<b>Crop Oil Concentrate Rates Per Acre<sup>(2)</sup></b>	<b>Special Use Instructions</b>
<b>Potato</b>	30 days	6-16 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
<b>Radish</b>	15 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  Do not apply more than 16 fl. oz./A (0.25 lb. ai) per acre in a season.  For repeat applications make on a minimum of a 14 day interval.
<b>Root Vegetables</b> (except Radish), including: Chicory Ginseng Horseradish Turnip	30 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Safflower</b>	70 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Sesame</b>	14 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply during flowering.  Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Soybean</b>	60 days	6-16 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	Do not graze treated fields or feed treated forage or hay to livestock.  Refer to appropriate Table for reduced rate recommendations for the control of small annual grasses.  The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
<b>Strawberry</b>	4 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.

**CROP SPECIFIC RESTRICTIONS AND LIMITATIONS FOR CLETHODIM [WARTHOG] 2 EC**

<b>Crops<sup>(1)</sup></b>	<b>Minimum Time From Application to Harvest (PHI)</b>	<b>Use Rates Per Acre</b>	<b>Crop Oil Concentrate Rates Per Acre<sup>(2)</sup></b>	<b>Special Use Instructions</b>
<b>Sugar Beet</b>	40 days	6-16 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	Refer to appropriate Table for reduced rate recommendations for the control of small annual grasses.  The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
<b>Sunflower</b>	70 days	6-16 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
<b>Sweet Potato, Yam and other Tuberous and Corn Vegetables (except Potato) including:</b> Artichoke Chinese Jerusalem Cassava Bitter Sweet Ginger	30 days	6-16 fl. oz.	1% v/v in the finished spray volume.	The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome, Johnsongrass, red rice, wild oats, volunteer cereals and volunteer corn.
<b>Tomato</b>	20 days	6-16 fl. oz.	1% v/v in the finished spray volume.	For repeat applications make on a minimum of a 14 day interval.

N/A = Not Applicable

- 1 CLETHODIM [WARTHOG] 2 EC is not recommended for use on vegetable crops being grown for seed production unless specific use directions are provided.
- 2 Acceptable crop oil concentrates would be those which contain a minimum of 80% oils and 15% emulsifier. A crop oil concentrate must contain either a petroleum or vegetable oil base and must meet all the following criteria: be non phytotoxic, contain only EPA-exempt ingredients, provide good mixing quality and be successful in local experience. Highly refined vegetable oils have proven more satisfactory than unrefined vegetable oils. See the Addition of Adjuvant and Crop Oil Concentrate section for further information.
- 3 CLETHODIM [WARTHOG] 2 EC may be applied to seedling or established alfalfa grown for seed, hay, silage, green chop or direct grazing.
- 4 For weed control in established alfalfa and mint, the minimum use rate is 10 fl. oz./A.
- 5 1 to 2 qts./A of liquid fertilizer (10-34-0, 28%N or 32%N), or an equivalent amount (2.5 to 4.0 lbs./A) of spray grade ammonium sulfate (AMS) may be added to CLETHODIM [WARTHOG] 2 EC applications, in addition to the recommended rate of crop oil concentrate.
- 6 Do not apply CLETHODIM [WARTHOG] 2 EC plus 2,4-DB as a tank mix to alfalfa unless the 60 day feeding, grazing, and harvesting restriction on the 2,4-DB label can be observed.
- 7 For ground applications to garlic or shallot, do not exceed 8 fl. oz./A in a single application. For air applications to onion, garlic or shallot, do not exceed 8 fl. oz./A in a single application. For garlic and shallot, do not exceed 2 applications per season. In CA for air applications to onion, do not exceed 2

applications per season.

- 8 If CLETHODIM [WARTHOG] 2 EC is applied as a spot treatment to onion, garlic, shallot, or non-bearing food crops, care should be taken to not exceed the maximum rate allowed on a "per acre" basis or crop injury may occur.
- 9 In California, do not apply CLETHODIM [WARTHOG] 2 EC to onion, garlic, or shallot until the crop has at least two full leaves. In California, 14 day spray intervals are recommended between the application of CLETHODIM [WARTHOG] 2 EC and liquid nitrogen or other herbicide applications. Injury to crop may occur when shorter intervals are observed.
- 10 Applications of CLETHODIM [WARTHOG] 2 EC to peas during the bloom period could result in severe crop injury, including loss of yield and delayed maturity.

#### **IMPORTANT**

Plant tolerance to CLETHODIM [WARTHOG] 2 EC at labeled rates has been found to be acceptable for the indicated genera and species listed below. Due to variability within species, crop growth stage, environmental conditions, and application techniques, it is recommended that the user determine if the herbicide can be used safely on a few plants prior to widespread application. Neither the seller nor the manufacturer of CLETHODIM [WARTHOG] 2 EC have investigated the safety factor to plants not listed on the label.

### **NON-BEARING FOOD CROPS**

**CLETHODIM [WARTHOG] 2 EC SHOULD NOT BE APPLIED TO NON-BEARING FRUIT OR NUT CROPS WHICH ARE GROWN FOR ROOT STOCK.**

**Crop injury to non-bearing fruit and nut crops can occur if CLETHODIM [WARTHOG] 2 EC is improperly applied. CLETHODIM [WARTHOG] 2 EC should not be applied directly over the top of these plant types. Instead, spray should be directed at the base of the plant where grassy weeds are growing near the ground.**

Non-bearing fruit and nut crops are plants which will not bear fruit or nuts for at least one year following CLETHODIM [WARTHOG] 2 EC application.

<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>
Apples	<i>Malus</i> spp.
Berries	<i>Vaccinium</i> spp.
	<i>Rubus</i> spp.
Cherry, Sweet	<i>Prunus avium</i>
Citrus Fruits	<i>Citrus</i> spp.
Grapes	<i>Vitis</i> spp.
Olives	<i>Olea</i> spp.
Peach	<i>Prunus persica</i>
Pears	<i>Pyrus communis</i>
Prunes	<i>Prunus</i> spp.
Stone Fruits	<i>Prunus</i> spp.
Strawberries	<i>Fragaria</i> spp.
Tree Nuts	
Almond	<i>Prunus triloba</i>
Filbert	<i>Corylus maxima</i>
Pecan	<i>Carya illinoensis</i>
Pistachio	<i>Pistacia vera</i>
Walnut	<i>Juglans</i> spp.

## CONIFER TREES

CLETHODIM [WARTHOG] 2 EC can be used to control labeled grasses in Christmas tree farms, conifer nurseries, and conifer plantations (but not in forests).

COMMON NAME	SCIENTIFIC NAME
Arborvitae, American	<i>Thuja occidentalis</i>
Cedars	<i>Cedrus</i> spp.
Cypress	<i>Taxodium</i> spp.
Fir, Douglas	<i>Pseudotsuga menziesii</i>
Firs	<i>Abies</i> spp.
Hemlock, Canadian/Eastern	<i>Tsuga canadensis</i>
Hemlock, Western	<i>Tsuga heterophylla</i>
Pines	<i>Pinus</i> spp.
Spruces	<i>Picea</i> spp.
Yew	<i>Taxus</i> spp.

## NON-CROP OR NON-PLANTED AREAS

The following areas are considered non-crop or non-planted areas: rights-of-way including railroads, highways, roads, dividers, medians, pipelines, public utility lines, pumping stations, transformer stations and substations. Around airports, electric utilities, commercial buildings, manufacturing plants, storage yards, rail yards, fence lines, parkways, and post-harvest croplands. Also beneath greenhouse benches and around golf courses.



ANNUAL GRASSES (EXCEPT FOR IN ESTABLISHED ALFALFA AND MINT)				
GRASS SPECIES	SCIENTIFIC NAME	WEED HEIGHT* (Inches)	RATE FL. OZ./ ACRE	HIGH RATE <sup>(1)</sup>
Barnyardgrass	<i>Echinochloa crus-galli</i>	2 to 8	6	8
Broadleaf Signalgrass	<i>Brachiaria platyphylla</i>	2 to 6	6	8
Brome				
California	<i>Bromus carinatus</i>	2 to 6	6	8
Cheat	<i>Bromus secalinus</i>	2 to 6	6	8
Downy	<i>Bromus tectorum</i>	2 to 6	6	8
Ripgut	<i>Bromus diandrus</i>	2 to 6	6	8
Canarygrass	<i>Phalaris canariensis</i>	1 to 4	6	8
Crabgrass				
Hairy	<i>Digitaria adscendens</i>	2 to 6**	6	8
Large	<i>Digitaria sanguinalis</i>	2 to 6**	6	8
Smooth	<i>Digitaria ischaemum</i>	2 to 6**	6	8
Southern	<i>Digitaria ciliaris</i>	2 to 6**	6	8
Crowfootgrass	<i>Dactyloctenium aegyptium</i>	2 to 6**	6	8
Fall Panicum	<i>Panicum dichotomiflorum</i>	2 to 8	6	8
Field Sandbur	<i>Cenchrus incertus</i>	2 to 6	6	8
Foxtail				
Giant	<i>Setaria faberi</i>	2 to 12	6	8
Green	<i>Setaria viridis</i>	2 to 8	6	8
Yellow	<i>Setaria glauc</i>	2 to 8	6	8
Goosegrass	<i>Eleusine indica</i>	2 to 6**	6	8
Itchgrass	<i>Rottboellia cochinchinensis</i>	2 to 6	6	8
Junglerice	<i>Echinochloa colona</i>	2 to 6	6	8
Lovegrass (Stinkgrass)	<i>Eragrostis cilianensis</i>	2 to 6	6	8
Rabbitsfootgrass	<i>Polypogon monspeliensis</i>	1 to 4	6	8
Red Rice	<i>Oryza sativa</i>	1 to 3	6	8
Ryegrass				
Hardy	<i>Lolium remotum</i>	2 to 6	6	8
Italian	<i>Lolium multiflorum</i>	2 to 6	6	8
Seedling Johnsongrass	<i>Sorghum halepense</i>	4 to 10	6	8
Shattercane	<i>Sorghum bicolor</i>	6 to 18	6	8
Southwestern Cupgrass	<i>Eriochloa gracilis</i>	2 to 6	6	8

continued

**ANNUAL GRASSES**  
(EXCEPT FOR IN ESTABLISHED ALFALFA AND MINT) (continued)

GRASS SPECIES	SCIENTIFIC NAME	WEED HEIGHT (inches)*	RATE FL. OZ./ ACRE	HIGH RATE <sup>(1)</sup>
Sprangle top				
Amazon	<i>Leptochloa panicoides</i>	2 to 6	6	8
Bearded	<i>Leptochloa fascicularis</i>	2 to 6	6	8
Mexican	<i>Leptochloa uninervia</i>	2 to 6	6	8
Red	<i>Leptochloa filiformis</i>	2 to 6	6	8
Texas Panicum	<i>Panicum texanum</i>	2 to 6	6	8
Volunteer Cereals <sup>(2)</sup>				
Barley	<i>Hordeum vulgare</i>	2 to 6	6	8
Oats	<i>Avena sativa</i>	2 to 6	6	8
Rye	<i>Secale cereale</i>	2 to 6	6	8
Wheat	<i>Triticum aestivum</i>	2 to 6	6	8
Volunteer Corn <sup>(3)</sup>	<i>Zea mays</i>	4 to 12	4	6
Volunteer Corn <sup>(3)</sup>	<i>Zea mays</i>	12 to 24	6	8
Volunteer Corn (S.R.) <sup>(4)</sup>	<i>Zea mays</i>	4 to 12	8 (suppression only)	
Volunteer Grain Sorghum	<i>Sorghum bicolor</i>	8 to 12	6	8
Wild Oats	<i>Avena fatua</i>	2 to 6	6	8
Wild Proso Millet	<i>Panicum miliaceum</i>	2 to 10	6	8
Witchgrass	<i>Panicum capillare</i>	2 to 8	6	8
Woolly Cupgrass	<i>Eriochloa villosa</i>	2 to 8	6	8

- Apply only to actively growing grasses at recommended weed heights.
- Apply when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.
- Use the high rate under heavy grass pressure and/or when grasses are at maximum height.
- Do not apply more than 8 fl. oz./A of CLETHODIM [WARTHOG] 2 EC per application to the following crops: asparagus, carrot, cranberry, cucurbits, flax, fruiting vegetables (except tomato), garden beets, green onion, head and stem brassica vegetables, herbs, hops, leaf petioles, leafy brassica greens, leafy greens, non-bearing food crops, root vegetables, safflower, sesame and strawberry. Do not apply more than 6 fl. oz./A of CLETHODIM [WARTHOG] 2 EC per application to canola or mustard seed.

\* Generally occurs between 3-leaf stage and tillering.

\*\* Length of lateral growth.

(1) Rates higher than 8 fl. oz./A may be applied in certain geographic areas, cropping situations, or environmental conditions, where experience has shown that higher rates are needed for satisfactory control of annual grasses. In these situations, rates from 8 to 16 fl. oz./A may be applied. Do not apply more than 8 fl. oz./A of CLETHODIM [WARTHOG] 2 EC per application to the following crops: asparagus, carrot, cranberry, cucurbits, flax, fruiting vegetables (except tomato), garden beet, green onion, head and stem brassica vegetables, herbs, hops, leaf petioles, leafy brassica greens, leafy greens, non-bearing food crops, root vegetables, safflower, sesame and strawberry. Do not apply more than 6 fl. oz./A of CLETHODIM [WARTHOG] 2 EC per application to canola or mustard seed.

(2) When a cereal grain crop (such as wheat) is interseeded for crop establishment or is planted as wind breaks aid crop establishment, the minimum CLETHODIM [WARTHOG] 2 EC use rate for control is 8 fl. oz./A.

(3) Includes Roundup Ready®, Liberty Link® and IMI-CORN® volunteer corn.

(4) Sethoxydim resistant volunteer corn.

**ANNUAL & PERENNIAL GRASS CONTROL  
IN ESTABLISHED ALFALFA AND MINT WITH CLETHODIM [WARTHOG] 2 EC**

GRASS SPECIES	WEED STAGE	RATE FL. OZ./ ACRE	HIGH RATE
Annual & Perennial Grasses Listed in Grass Table	See Table	10	16

**Mowing:** The best control of annual grasses can be achieved by applying CLETHODIM [WARTHOG] 2 EC before grass weeds are mowed. Once a grass is mowed it becomes tougher to control, as much of the available leaf surface has been removed. In areas without a killing frost, some annuals can over-winter after having been mowed multiple times. These grasses form large crowns and may contain many viable buds. These grasses, even though they may be an annual grass, may require repeated applications of CLETHODIM [WARTHOG] 2 EC for partial or complete control.

**Irrigated Alfalfa and Mint:** Irrigation practices can be very critical to the successful use of CLETHODIM [WARTHOG] 2 EC in established alfalfa and mint and may be necessary to initiate active growth of the weeds prior to application. Generally applications 2 to 4 days after an irrigation are most effective. Irrigation made shortly after application (2 days) can be effective, but more consistent grass control occurs when the irrigation is made before the application.

**Aerial Application:** Apply CLETHODIM [WARTHOG] 2 EC in a minimum of 10 GPA in established alfalfa and mint when applying by air.

**Annual Grass Control:** Apply CLETHODIM [WARTHOG] 2 EC at the grass sizes indicated in the Recommendation for Annual Grass Table and rates indicated. If a grass has been cut, apply CLETHODIM [WARTHOG] 2 EC after active growth has resumed and regrowth has reached the minimum height and before it reaches the maximum height indicated. Apply before the alfalfa/mint canopy covers the grasses and interferes with the spray coverage. Some annual grasses are spring- and summer-germinating plants, while others are fall-germinating plants, and the time they are actively growing and most susceptible to CLETHODIM [WARTHOG] 2 EC may vary from region to region. Also some annuals germinate over a extended period of time, and because control of small grasses is desired, applications after each weed flush may be required. As a general rule spray spring and summer-germinating grasses as early in the season as possible, after initial green-up. Spray fall-germinating weeds in the fall soon after they begin growing but before any damage is done due to frost. Late fall applications may be less effective due to environmental conditions, such as frost, slower plant growth, or the onset of flowering.

**Perennial Grass Control:** CLETHODIM [WARTHOG] 2 EC effectively controls perennial grasses such as bermudagrass, Johnsongrass, quackgrass, wirestem muhly, tall fescue, foxtail barley and orchardgrass. Due in part to lack of tillage, perennial grasses are more difficult to control in a perennial crop such as established alfalfa or mint. A program of repeated applications is usually necessary for best results. The best way to control perennial grasses is to do so in the year of stand establishment before rhizomes and stolons become large and difficult to kill.

Use the high rate under heavy grass pressure and/or when grasses are at or near maximum height.

Always add a crop oil concentrate at 1 qt./A by ground or 1% v/v (but not less than 1 pt./A) to the finished spray volume by air.

**ANNUAL BLUEGRASS CONTROL  
WITH CLETHODIM [WARTHOG] 2 EC**

GRASS SPECIES	WEED STAGE	RATE FL. OZ./ ACRE	HIGH RATE
Annual Bluegrass ( <i>Poa annua</i> )	to 4-leaf	6*	16
<ul style="list-style-type: none"> <li>• Apply under favorable soil moisture and humidity, which exists within a few days after rainfall or within 7 days after irrigation. Grass needs to be actively growing at time of application(s).</li> <li>• Apply at weed stage indicated on the label, as reduced control can be expected with more mature annual bluegrass.</li> <li>• Use the high rate under heavy grass pressure and/or when annual bluegrass is more mature.</li> <li>• Always add a crop oil concentrate at 1 qt./A by ground to the finished spray volume.</li> </ul>			
*Use a minimum of 10 fl. oz./A to control annual bluegrass in seedling and established alfalfa and mint.			

**DIRECTIONS FOR REDUCED RATE TO CONTROL  
SMALL ANNUAL GRASSES IN CANOLA, BEAN (DRY) & PEA (SHELLED) (INCLUDING  
SOYBEAN), EDIBLE PODDED LEGUME VEGETABLES, FLAX, MUSTARD SEED,  
BEAN & PEA (SUCCULENT SHELLED) AND SUGAR BEET  
(REDUCED RATE NOT FOR USE IN CALIFORNIA)**

GRASS SPECIES	SCIENTIFIC NAME	WEED HEIGHT (Inches)	RATE FL.OZ/ ACRE <sup>(1)</sup>
Barnyardgrass	<i>Echinochloa crus-galli</i>	1 to 4	4
Broadleaf Signalgrass	<i>Brachiaria platyphylla</i>	1 to 4	5
<b>Crabgrass</b>			
Large	<i>Digitaria sanguinalis</i>	1 to 3*	4
Large	<i>Digitaria sanguinalis</i>	1 to 4*	5
Smooth	<i>Digitaria ischaemum</i>	1 to 3*	4
Smooth	<i>Digitaria ischaemum</i>	1 to 4*	5
Southern	<i>Digitaria ciliaris</i>	1 to 4*	5
Fall Panicum	<i>Panicum dichotomiflorum</i>	1 to 4	4
<b>Foxtail</b>			
Giant	<i>Setaria faberi</i>	1 to 4	4
Green	<i>Setaria viridis</i>	1 to 4	4
Millet	<i>Setaria italica</i>	1 to 4	5
Yellow	<i>Setaria glauca</i>	1 to 4	4
Seedling Johnsongrass	<i>Sorghum halepense</i>	1 to 6	5
Shattercane	<i>Sorghum bicolor</i>	4 to 10	4
Texas Panicum	<i>Panicum texanum</i>	1 to 4	5
<b>Volunteer Cereals</b>			
Barley	<i>Hordeum vulgare</i>	1 to 4	5
Oats	<i>Avena sativa</i>	1 to 4	5
Wheat	<i>Triticum aestivum</i>	1 to 4	5
Volunteer Corn**	<i>Zea mays</i>	4 to 12	4
Wild Proso Millet	<i>Panicum miliaceum</i>	1 to 6	4
Wild Oats	<i>Avena fatua</i>	1 to 4	5
<ul style="list-style-type: none"> <li>▪ Apply only to actively growing grasses at recommended weed heights.</li> <li>▪ Apply when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.</li> <li>▪ Regrowth by tillering may occur if application is made when plants are stressed by lack of moisture, excessive moisture, low or high temperatures and/or under very low humidity.</li> </ul>			
* Length of lateral growth			
** Not S.R. Corn			
(1) Always add a crop oil concentrate at 1 qt./A by ground application to the finished spray volume.			

## PERENNIAL GRASSES

GRASS SPECIES	WEED HEIGHT (inches)	RATE FL. OZ./ ACRE	HIGH RATE
<b>Bermudagrass (<i>Cynodon dactylon</i>)</b>			
First Application	3 (or up to 6" runners)	8	16
Repeat Application(s) (if regrowth occurs)	3 (or up to 6" runners)	8	16
<b>Fescue, Tall (<i>Festuca arundinacea</i>)</b>			
First Application	4 to 8	8	16
Repeat Application(s) (if regrowth occurs)	4 to 8	8	16
<b>Foxtail Barley (<i>Hordeum jubatum</i>)</b>			
First Application	2 to 6	8	16
Repeat Application(s) (if regrowth occurs)	2 to 6	8	16
<b>Orchardgrass (<i>Dactylis glomerata</i>)</b>			
First Application	4 to 8	8	16
Repeat Application(s) (if regrowth occurs)	4 to 8	8	16
<b>Quackgrass* (<i>Elytrigia repens</i>)</b>			
First Application	4 to 12	8	16
Repeat Application(s) (if regrowth occurs)	4 to 12	8	16
<b>Rhizome Johnsongrass (<i>Sorghum halepense</i>)</b>			
First Application	12 to 24	8	16
Repeat Application(s) (if regrowth occurs)	6 to 18	6	8
<b>Wirestem Muhly (<i>Muhlenbergia frondosa</i>)</b>			
First Application	4 to 8	8	16
Repeat Application(s) (if regrowth occurs)	4 to 8	8	16
<b>Perennial Bluegrass*</b>			
<b>Roughstalk (<i>Poa trivialis</i>)</b>			
<b>Kentucky (<i>Poa prantensis</i>)</b>			
First Application	2 to 4	8	16
Repeat Application(s) (if regrowth occurs)	2 to 4	8	16
<b>Bentgrass* (<i>Agrostis</i> spp.)</b>			
First Application	2 to 4	-	16
Repeat Application(s) (if regrowth occurs)	2 to 4	-	16

- Apply only to actively growing grasses at recommended weed heights.
- Apply when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.
- Use the high rate under heavy grass pressure and/or when grasses are at maximum height.
- Do not apply more than 8 fl. oz./A of CLETHODIM [WARTHOG] 2 EC per application to the following crops: asparagus, carrot, cranberry, cucurbits, flax, fruiting vegetables (except tomato), garden beet, green onion, head & stem brassica vegetables, herbs, hops, leaf petioles, leafy brassica greens, leafy greens, non-bearing food crops, root vegetables, safflower, sesame and strawberry. Do not apply more than 6 fl. oz./A of CLETHODIM [WARTHOG] 2 EC per application to canola or mustard seed.

\*Control of quackgrass, perennial bluegrass and bentgrass with CLETHODIM [WARTHOG] 2 EC may be enhanced by adding AMS at 2.5 to 4.0 lbs./A

## TANK MIXES

### USE INFORMATION

The labels for each of the herbicides recommended for tank mixing with CLETHODIM [WARTHOG] 2 EC are unique to the characteristics of those products and contain restrictions and limitations that may be more restrictive than the CLETHODIM [WARTHOG] 2 EC label in certain considerations. Those concerns may include, but are not limited to:

1. Geographic restrictions - all products are not registered for use in all areas and rates may vary from one region of labeled use to another;
2. Crop rotation restrictions;
3. Applicator certification requirements;
4. Worker safety rules (e.g. protective clothing, reentry time, posting);
5. Soil type or soil characteristics (e.g. pH, OM);
6. Maximum dosage or number of applications per season;
7. Rain free period required; or
8. Application timing (e.g. pre-harvest interval)
9. Do not exceed the total season rates.

**THE MOST RESTRICTIVE LABELING OF ANY PRODUCT USED IN A TANK MIX MUST BE FOLLOWED.**

### TANK MIX APPLICATION OF CLETHODIM [WARTHOG] 2 EC AND BROADLEAF HERBICIDES FOR CONTROL OF GRASSES AND BROADLEAF WEEDS

- Apply only to actively growing grass and broadleaf weeds at recommended height or growth stage listed on each label.
- Apply when the first grass or broadleaf weed species in a mixed population reaches the recommended height or growth stage for treatment.
- Apply under favorable soil moisture and humidity that exist a few days after rainfall or within seven days after irrigation.
- Always add the appropriate adjuvant to the spray mix at the rate recommended for each specific tank mix combination.
- Tank mix applications may sometimes result in reduced grass control and possible increases in crop injury as compared to either product used alone. If regrowth occurs, or an additional flush of new grass emerges, make a second application of CLETHODIM [WARTHOG] 2 EC, as specified in the respective size and rate tables.
- Do not tank mix CLETHODIM [WARTHOG] 2 EC when broadleaf weeds are tall and/or dense enough to prevent proper grass coverage.

### MIXING INSTRUCTIONS

1. Fill clean spray tank 1/2 to 2/3 of desired level with clean water.
2. While agitating, add the correct amount of CLETHODIM [WARTHOG] 2 EC. Agitation should create a rippling or rolling action on the water surface.
3. If tank mixing CLETHODIM [WARTHOG] 2 EC with other labeled herbicides, add water soluble bags first, followed by dry formulations, flowables, emulsifiable concentrates, and then solutions. Prepare no more spray mixture than is required for the immediate spray operation.
4. Add any required adjuvants (crop oil concentrate, non-ionic surfactant and/or nitrogen solution).
5. Fill spray tank to desired level with water. **Agitation should continue until all spray solution has been applied.**

Failure to agitate the spray solution may result in improper mixing of the herbicides and unsatisfactory weed control. Mixing and compatibility qualities should be verified by a jar test.

## INFORMATION ON ANTAGONISM

Tank mixes of CLETHODIM [WARTHOG] 2 EC with postemergence broadleaf herbicides have shown some reduction or failure to control certain grass species which would have otherwise been controlled when CLETHODIM [WARTHOG] 2 EC is applied alone. Activity of the postemergence broadleaf herbicide in the tank mix is not affected.

## ALFALFA

**Table 1. CLETHODIM [WARTHOG] 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR ALFALFA (Refer to the recommendation tables above for specific grasses and growth stages)**

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM [WARTHOG] 2 EC + 2,4-DB <sup>(4)</sup>	10 to 16 fl. oz. + Refer to 2,4-DB label	10 to 16 fl. oz. + Refer to 2,4-DB label	1%	1%
CLETHODIM [WARTHOG] 2 EC + PURSUIT DG <sup>(5)</sup> or PURSUIT <sup>(5)</sup>	10 to 16 fl. oz. + 1.08 to 2.16 oz. or 3 to 6 fl. oz.	-	1%	1%
CLETHODIM [WARTHOG] 2 EC + BUCTRIL® 2L <sup>(6)</sup> or BUCTRIL GEL <sup>(6,7)</sup>	10 to 16 fl. oz. + 1.0 to 1.5 pts. or 0.5 to 0.75 pt.	-	0.5%	0.5%

(1) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM [WARTHOG] 2 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

(2) Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

(3) Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

(4) CLETHODIM [WARTHOG] 2 EC plus 2,4-DB may increase the severity of crop injury when tank mixed. Alfalfa plants will generally outgrow this temporary crop injury within a few weeks.

(5) Before using this tank mix, read and understand the PURSUIT or PURSUIT DG labels for geographical restrictions and restrictions regarding alfalfa growth stage and type. Failure to do so can result in crop injury to alfalfa. Do not feed, graze, or harvest alfalfa for 30 days following an application of PURSUIT to alfalfa.

(6) In the states of Washington, Oregon, Idaho, Montana, Wyoming, Colorado, Utah, Nevada and the western halves of North Dakota, South Dakota, Nebraska, and Kansas: The CLETHODIM [WARTHOG] 2 EC plus BUCTRIL or BUCTRIL GEL tank mix must be applied in the fall or spring to seedling alfalfa when the majority of the field has a minimum of 2 trifoliate leaves. Unacceptable crop injury may occur to alfalfa seedlings less than the 2 trifoliate leaf stage. CLETHODIM [WARTHOG] 2 EC plus BUCTRIL or BUCTRIL GEL applications made when temperatures are expected to exceed 80°F at (and 3 days following) application can result in unacceptable crop injury. In the states not listed above, apply in the fall or spring to seedling alfalfa when the majority of the field has a minimum of 4 trifoliate leaves. When alfalfa stand is uneven and conditions favor leaf burn, unacceptable crop injury may occur to alfalfa in the 2 trifoliate or smaller stage of growth. CLETHODIM [WARTHOG] 2 EC plus BUCTRIL or BUCTRIL GEL applications made when temperatures are expected to exceed 70°F at (and 3 days following) application can result in unacceptable crop injury. Crop leaf burn can occur following CLETHODIM [WARTHOG] 2 EC plus BUCTRIL or BUCTRIL GEL application. Warm, humid conditions may enhance leaf burn. New crop growth will not be affected.

(7) Do not apply when alfalfa is under moisture, temperature, insect or disease stress or has been stressed by other pesticide carryover or application.



## CANOLA

**Table 2. REDUCED RATE CLETHODIM [WARTHOG] 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR CANOLA**

(Refer to the recommendation tables above for specific grasses and growth stages.)

PRODUCT	APPLICATION RATES/ACRE		AMMONIUM SULFATE	
	ANNUAL GRASSES <sup>(1)</sup>	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM [WARTHOG] 2 EC <sup>(2)</sup> + LIBERTY <sup>(3)</sup>	4 to 5 fl. oz. + 34 fl. oz.	-	3.0 lbs.	3.0 lbs.

(1) Annual grasses and sizes controlled with these tank mixtures are those that are identified in the **DIRECTIONS FOR REDUCED RATE TO CONTROL SMALL ANNUAL GRASSES** table.

(2) Do not apply Clethodim [Warthog] 2 EC tank mix during or after bolting or flowering or crop injury may occur.

(3) For use only on LibertyLink® canola

## COTTON

**Table 3. CLETHODIM [WARTHOG] 2 EC TANK MIXED WITH COBRA® AND MSMA APPLIED POST DIRECTED TO COTTON**

PRODUCT <sup>(1)</sup>	APPLICATION RATES/ACRE <sup>(2)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> V/V	COMMENTS
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	
CLETHODIM [WARTHOG] 2 EC <sup>(4)</sup> + COBRA + MSMA (4.0 lbs./gal.) or MSMA (6.6 lbs./gal.)	6 to 8 fl. oz.	8 to 16 fl. oz.	1%	Reduce broadcast rate in proportion to the band area actually treated.
	See COBRA label for rates to control broadleaf weeds and height limitations for cotton. Refer to the CLETHODIM [WARTHOG] 2 EC label for weed height and species controlled.			
	See MSMA label for rates to control broadleaf weeds and height limitations for cotton. Refer to the CLETHODIM [WARTHOG] 2 EC label for weed height and species controlled.			

(1) Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

(2) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM [WARTHOG] 2 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

(3) Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

(4) If at the time of application, grass height is so tall that post-directed applications cannot get good coverage over the top of the grassy weeds, then poor control may result and a second (non-post directed) application of CLETHODIM [WARTHOG] 2 EC may be necessary.

## COTTON (continued)

**Table 4. CLETHODIM [WARTHOG] 2 EC TANK MIXED WITH BUCTRIL 4 EC TO CONTROL EMERGED WEEDS IN BXN COTTON AS A BROADCAST APPLICATION**

PRODUCT <sup>(1)</sup>	APPLICATION RATE/ACRE <sup>(2)</sup>	CROP OIL CONCENTRATE PER ACRE <sup>(3)</sup>	COMMENTS <sup>(7)</sup>
	ANNUAL GRASSES		
CLETHODIM [WARTHOG] 2 EC + BUCTRIL 4 EC <sup>(4,5,6)</sup>	8 to 16 fl. oz.  See BUCTRIL 4 EC label for rates to control broadleaf weeds and height limitations for cotton.	1 qt.	See charts for grasses controlled.

(1) Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage.

(2) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM [WARTHOG] 2 EC at the recommended rate with the appropriate amount of crop oil concentrate in a non-BUCTRIL tank mix.

(3) Always add a crop oil concentrate at 1 qt./A by ground in the finished spray solution.

(4) Applications of BUCTRIL 4 EC can be made only to cotton that has been genetically modified for crop tolerance to postemergence over-the-top applications of bromoxynil.

(5) Do not apply the CLETHODIM [WARTHOG] 2 EC plus BUCTRIL tank mix within 75 days of harvest.

(6) Do not exceed 2 applications of BUCTRIL before cotton is 12 inches tall and one application after 12 inches tall.

(7) Use a minimum of 10 gals. of spray solution per acre.

**Table 5. CLETHODIM [WARTHOG] 2 EC TANK MIXED WITH GLYPHOSATE TO CONTROL EMERGED GRASSES IN COTTON AS A BROADCAST APPLICATION**

PRODUCT	APPLICATION RATE/ACRE <sup>(1)</sup>		ADJUVANT		COMMENTS
	ANNUAL GRASSES	PERENNIAL GRASSES	Glyphosate formulation <b>with</b> built in adjuvant	Glyphosate formulation <b>without</b> built in adjuvant	
CLETHODIM [WARTHOG] 2 EC + GLYPHOSATE	6 to 8 fl. oz.  See glyphosate label for rates to control broadleaf weeds and height limitations for cotton.	8 to 16 fl. oz.	Non-ionic surfactant @ 0.125 to 0.25% v/v plus ammonium sulfate @ 8.5 to 17 lbs. per 100 gals. of carrier	Crop oil concentrate @ 1 pt./A plus ammonium sulfate @ 8.5 to 17 lbs. per 100 gals. of carrier	See charts for grasses controlled.  Use a minimum of 10 gals. of spray solution per acre.

(1) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM [WARTHOG] 2 EC at the recommended rate with the appropriate amount of crop oil concentrate.

## BEANS (DRY AND SUCCULENT SHELLED)

**Table 6. CLETHODIM [WARTHOG] 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR BEANS (DRY AND SUCCULENT SHELLED)**

(Refer to the recommendation tables above for specific grasses and growth stages.)

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM [WARTHOG] 2 EC + BASAGRAN®	8 to 10 fl. oz. + 1.0 to 2.0 pts.	10 to 16 fl. oz. + 1 to 2 pts.	1%	1%

(1) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM [WARTHOG] 2 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

(2) Broadleaf weed control may be reduced when grass populations are tall enough or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

(3) Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

## FLAX

**Table 7. REDUCED RATE CLETHODIM [WARTHOG] 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR FLAX**

(Refer to the recommendation tables above for specific grasses and growth stages)

PRODUCT	APPLICATION RATES/ACRE		CROP OIL CONCENTRATE	
	ANNUAL GRASSES <sup>(1)</sup>	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM [WARTHOG] 2 EC + BRONATE ADVANCED™ <sup>(2, 3)</sup>	4 to 5 fl. oz. + 11.4 fl. oz.	-	1 pt.	1 pt.
CLETHODIM [WARTHOG] 2 EC + BRONATE® <sup>(2, 3)</sup>	4 to 5 fl. oz. + 0.9 pt.	-	1 pt.	1 pt.
CLETHODIM [WARTHOG] 2 EC + BUCTRIL <sup>(2, 3)</sup>	4 to 5 fl. oz. + 1.0 pt.	-	1 pt.	1 pt.
CLETHODIM [WARTHOG] 2 EC + RHONOX® <sup>(2, 3)</sup>	4 to 5 fl. oz. + 0.25 to 0.5 pt.	-	1 pt.	1 pt.

(1) Annual grasses and sizes controlled with these tank mixtures are those that are identified in the DIRECTIONS FOR REDUCED RATE TO CONTROL SMALL ANNUAL GRASSES table.

(2) Do not apply Clethodim [Warthog] 2 EC tank mix during or after the bud stage or to ornamental flax or crop injury may occur.

(3) Do not apply tank mixes if temperatures are expected to exceed 85°F at (or 3 days following) application or crop injury may occur.

## SOYBEAN

**Table 8. CLETHODIM [WARTHOG] 2 EC TANK MIXES<sup>(3)</sup> TO CONTROL ANNUAL GRASSES WHEN USED AS A BURNDOWN IN NO-TILL SOYBEAN**

PRODUCT	PRODUCT RATE/ACRE <sup>(1)</sup>	GRASS HEIGHT (Inches)	CROP OIL CONCENTRATE /ACRE <sup>(2)</sup>	28%N OR 32%N QTS./A OR 2.5 TO 4.0 LBS. AMS
CLETHODIM [WARTHOG] 2 EC + 2,4-D ester <sup>*(3)</sup>	3 fl. oz.	Foxtail 1 to 3 Fall Panicum 1 to 3	1 qt.	1 to 2 qts. or 2.5 to 4.0 lbs. AMS
	4 fl. oz.	Foxtail 1 to 4 Fall Panicum 1 to 4	1 qt.	1 to 2 qts. or 2.5 to 4.0 lbs. AMS
	6 to 8 fl. oz. + 0.5 lb. ai	(See Grass Chart for grasses claimed.)	1 qt.	1 to 2 qts. or 2.5 to 4.0 lbs. AMS

\*2,4-D ester should not be used where drift sensitive crops may be grown.

(1) If regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM [WARTHOG] 2 EC according to the appropriate size and rate recommendations.

(2) Always use a crop oil concentrate at the listed rate in the finished spray volume.

(3) The following products can be tank mixed with CLETHODIM [WARTHOG] 2 EC plus 2,4-D ester: VALOR® AUTHORITY® BROADLEAF, CANOPY XL®, DUAL® 8 E, DUAL II®, DUAL MAGNUM®, PROWL®, SENCOR®, SENCOR plus the DUAL products and TURBO®.

**Table 9. CLETHODIM [WARTHOG] 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR SOYBEAN**

(Refer to the recommendation tables above for specific grasses and growth stages.)

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM [WARTHOG] 2 EC + COBRA	6 to 8 fl. oz. + 12.5 fl. oz.	8 to 16 fl. oz. + 12.5 fl. oz.	0.5 to 1%	1%
CLETHODIM [WARTHOG] 2 EC + BASAGRAN 4 SL	8 to 10 fl. oz. + 1 to 2 pts.	10 to 16 fl. oz. + 1 to 2 pts.	1%	1%
CLETHODIM [WARTHOG] 2 EC + Glyphosate (For use on Roundup Ready soybean only)	6 to 8 fl. oz. + 0.75 to 3.0 lb. ai	8 to 16 fl. oz. + 0.75 to 3.0 lb. ai	0.5 to 1% <sup>(4)</sup>	1% <sup>(4)</sup>
CLETHODIM [WARTHOG] 2 EC + ULTRA BLAZER®	6 to 8 fl. oz. + 1 to 1.5 pts.	6 to 8 fl. oz. + 1 to 1.5 pts.	0.5 to 1%	1%

continued

**Table 9. CLETHODIM [WARTHOG] 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR SOYBEAN**

(Refer to the recommendation tables above for specific grasses and growth stages.)

(continued)

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM [WARTHOG] 2 EC + FLEXSTAR® HL <sup>(6)</sup>	6 to 8 fl. oz. Refer to the FLEXSTAR HL label for specific application rates.	8 to 16 fl. oz. Refer to the FLEXSTAR HL label for specific application rates.	1%	1%
CLETHODIM [WARTHOG] 2 EC + CLASSIC® 25 DG	8 to 10 fl. oz. + 0.5 to 0.75 oz.	10 to 16 fl. oz. + 0.5 to 0.75 oz.	1%	1%
CLETHODIM [WARTHOG] 2 EC <sup>(4)</sup> + PURSUIT® 70 DG	6 to 8 fl. oz. + 1.44 oz.	8 to 16 fl. oz. + 1.44 oz.	1%	1%
CLETHODIM [WARTHOG] 2 EC <sup>(5)</sup> + COBRA + CLASSIC 25 DG	8 to 10 fl. oz. + 6 to 8 fl. oz. + 0.5 to 0.75 oz.	-	0.5%	1%
CLETHODIM [WARTHOG] 2 EC <sup>(5)</sup> + COBRA + BASAGRAN 4 SL	8 to 10 fl. oz. + 6 to 10 fl. oz. + 1 to 1.5 pts.	-	0.5%	1%
CLETHODIM [WARTHOG] 2 EC <sup>(5)</sup> + COBRA + PURSUIT 70 DG	8 to 10 fl. oz. + 6 to 10 fl. oz. + 1.44 oz.	-	0.5%	1%
CLETHODIM [WARTHOG] 2 EC <sup>(5)</sup> + STORM®	8 to 10 fl. oz. + 1.5 pts.	-	0.5%	1%

continued

**Table 9. CLETHODIM [WARTHOG] 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR SOYBEAN**

(Refer to the recommendation tables above for specific grasses and growth stages.)

(continued)

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM [WARTHOG] 2 EC <sup>(5)</sup> + RESOURCE® + PURSUIT 70 DG	8 to 10 fl. oz. + 4 fl. oz. + 1.44 oz.	-	1%	1%
CLETHODIM [WARTHOG] 2 EC <sup>(5)</sup> + RESOURCE + BASAGRAN	8 to 10 fl. oz. + 4 fl. oz. + 1 pt.	-	1%	1%
CLETHODIM [WARTHOG] 2 EC <sup>(5)</sup> + RESOURCE + CLASSIC	8 to 10 fl. oz. + 4 fl. oz. + 0.5 oz.	-	1%	1%
CLETHODIM [WARTHOG] 2 EC <sup>(5)</sup> + COBRA + RESOURCE	6 to 8 fl. oz. + 6 fl. oz. + 4 fl. oz.	-	0.5%	1%
CLETHODIM [WARTHOG] 2 EC <sup>(5)</sup> + FIRSTRATE®	6 to 8 fl. oz. + 0.3 oz.	8 to 16 fl. oz. + 0.3 oz.	1%	-
CLETHODIM [WARTHOG] 2 EC <sup>(5)</sup> + COBRA + FIRSTRATE	6 to 8 fl. oz. + 6 to 8 fl. oz. + 0.3 oz.	8 to 16 fl. oz. + 6 to 8 fl. oz. + 0.3 oz.	1%	-
CLETHODIM [WARTHOG] 2 EC <sup>(5)</sup> + RAPTOR® (1 AS)	6 to 8 fl. oz. + 4 to 5 fl. oz.	-	1%	-
CLETHODIM [WARTHOG] 2 EC <sup>(5)</sup> + COBRA + RAPTOR (1 AS)	6 to 8 fl. oz. + 6 to 8 fl. oz. + 4 to 5 fl. oz.	-	1%	-

continued

**Table 9. CLETHODIM [WARTHOG] 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR SOYBEAN**

(Refer to the recommendation tables above for specific grasses and growth stages.)

(continued)

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM [WARTHOG] 2 EC <sup>(5)</sup> + SYNCHRONY® STS™	6 to 8 fl. oz. <sup>(7)</sup> + 0.5 oz./A	-	1 qt.	-
CLETHODIM [WARTHOG] 2 EC <sup>(5)</sup> + COBRA Herbicide + SYNCHRONY STS™	6 to 8 fl. oz. <sup>(7)</sup> + 4 to 8 fl. oz. + 0.5 oz.	-	1 pt.	-
CLETHODIM [WARTHOG] 2 EC <sup>(5)</sup> + RESOURCE	6 to 8 fl. oz. + 4 to 12 fl. oz.	-	1 qt.	-
CLETHODIM [WARTHOG] 2 EC <sup>(5)</sup> + FRONTROW™	8 to 10 fl. oz. + Refer to FRONTROW label for use rates.	-	1%	-
CLETHODIM [WARTHOG] 2 EC + FIRSTRATE + FLEXSTAR HL <sup>(5)</sup>	6 to 8 fl. oz. + 0.3 oz. + Refer to the FLEXSTAR HL label for specific application rates.	8 to 16 fl. oz. + 0.3 oz. + Refer to the FLEXSTAR HL label for specific application rates.	1%	-

(1) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM [WARTHOG] 2 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

(2) Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

(3) Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

(4) The addition of 2.5 lb. of ammonium sulfate is required when CLETHODIM [WARTHOG] 2 EC is tank mixed with glyphosate. If the glyphosate formulation has a stand alone built in adjuvant, add 0.125% v/v non-ionic surfactant in place of crop oil concentrate. If the glyphosate formulation does not have a built in adjuvant system add 0.5 to 1% crop oil concentrate for ground application and 1% v/v for aerial application.

(5) The addition of 1 to 2 qts./A of liquid fertilizer (10-34-0, 28%N, or 32%N) is recommended when CLETHODIM [WARTHOG] 2 EC is tank mixed with PURSUIT, RESOURCE, STORM, FIRSTRATE, SYNCHRONY, RAPTOR, FRONTROW, COBRA plus CLASSIC, COBRA plus BASAGRAN, COBRA plus PURSUIT, COBRA plus FIRSTRATE, COBRA plus SYNCHRONY, and COBRA plus RAPTOR. An equivalent amount (2.5 to 4.0 lbs./A) of spray grade ammonium sulfate (AMS) may be added in place of liquid fertilizer. Fertilizer adjuvants are to be added in addition to the crop oil concentrate.

(6) Refer to FLEXSTAR HL label for geographic and rotational restrictions.

(7) Annual grasses and sizes controlled with these tank mixtures are those that are identified in the DIRECTIONS FOR REDUCED RATE TO CONTROL SMALL ANNUAL GRASSES table.

## SOYBEAN (continued)

**Table 10. REDUCED RATE CLETHODIM [WARTHOG] 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR SOYBEAN (Refer to table for reduced rate use in canola, dry shelled bean & pea, edible podded legume vegetables, flax, mustard seed, soybean, succulent bean & pea and sugar beet recommendations for small annual grasses for specific grasses and growth stages)**

PRODUCT	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3,4)</sup> (V/V)	
	ANNUAL GRASSES <sup>(2)</sup>	PERENNIAL GRASSES		
			GROUND	AIR
CLETHODIM [WARTHOG] 2 EC + FIRSTRATE	4 to 8 fl. oz. + 0.3 oz.	-	1%	1%
CLETHODIM [WARTHOG] 2 EC + PURSUIT 70 DG	4 to 6 fl. oz. + 1.44 oz.	-	1%	1%

(1) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM [WARTHOG] 2 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

(2) Annual grasses and sizes controlled with these tank mixtures are those that are identified in the **DIRECTIONS FOR REDUCED RATE TO CONTROL SMALL ANNUAL GRASSES** table.

(3) Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

(4) The addition of 1 to 2 qts./A of liquid fertilizer (10-34-0, 28%N, or 32%N) is required when CLETHODIM [WARTHOG] 2 EC is tank mixed at reduce rates. An equivalent amount (2.5 to 4.0 lbs./A) of spray grade ammonium sulfate (AMS) may be added in place of liquid fertilizer. Fertilizer adjuvants are to be added in addition to the crop oil concentrate.

## PEANUT (INCLUDING PERENNIAL)

**Table 11. CLETHODIM [WARTHOG] 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR PEANUT (INCLUDING PEANUT)**

(Refer to the recommendation tables above for specific grasses and growth stages.)

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
	ANNUAL GRASSES <sup>(2)</sup>	PERENNIAL GRASSES		
			GROUND	AIR
CLETHODIM [WARTHOG] 2 EC + BASAGRAN	8 to 10 fl. oz. + 1.0 to 2.0 pts.	-	1%	1%
CLETHODIM [WARTHOG] 2 EC + ULTRA BLAZER	8 to 10 fl. oz. + 0.5 to 1.5 pts.	-	1%	1%
CLETHODIM [WARTHOG] 2 EC + STORM	8 to 10 fl. oz. + 1.5 pts.	-	1%	1%

(1) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM [WARTHOG] 2 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

(2) Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

(3) Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.



**GRASS SUPPRESSION FOR HARVEST EFFICIENCY IN PEANUT (INCLUDING PERENNIAL)  
WITH CLETHODIM [WARTHOG] 2 EC**

GRASS SPECIES	WEED STAGE	RATE FL. OZ./ ACRE	HIGH RATE
Annual and perennial grasses that exceed height claimed for control on height charts "ANNUAL GRASSES" & "PERENNIAL GRASSES"	Up to and including grasses in the seed head stage.	16	32
<ul style="list-style-type: none"> <li>Do not apply as part of a tank mix when applying CLETHODIM [WARTHOG] 2 EC for grass suppression.</li> <li>Add a crop oil concentrate at 1 qt./A by ground to the finished spray volume.</li> </ul>			

**SUGAR BEET**

**Table 12. CLETHODIM [WARTHOG] 2 EC TANK MIXED WITH STINGER® APPLIED TO SUGAR BEET**

(Refer to the recommendation tables above for specific grasses and growth stages)

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
	Annual Grasses	Perennial Grasses	Ground	Air
CLETHODIM [WARTHOG] 2 EC + STINGER	6 to 8 fl. oz.	8 to 16 fl. oz.	1%	1%
	See STINGER label for rates.			

(1) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM [WARTHOG] 2 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

(2) Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

(3) Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

**Table 13. CLETHODIM [WARTHOG] 2 EC TANK MIXED WITH BETAMIX® or BETANEX® APPLIED TO SUGAR BEET**

PRODUCT <sup>(1)</sup>	WEEDS CONTROLLED		WEED HEIGHT (inches)	APPLICATION RATE/ACRE <sup>(2)</sup>
	COMMON NAME	SCIENTIFIC NAME		
CLETHODIM [WARTHOG] 2 EC <sup>(3)</sup> + BETAMIX or BETANEX	Barnyardgrass	<i>Echinochloa crus-galli</i>	1 to 3	8 fl. oz.
	Foxtail	<i>Setaria</i> spp.	1 to 3	
	Foxtail Millet	<i>Setaria italica</i>	1 to 3	
	Wild Oat	<i>Avena fatua</i>	1 to 3	
	Wild Proso Millet	<i>Panicum miliaceum</i>	1 to 3	
			See BETAMIX label for rates to control broadleaf weeds. <b>No additives are recommended in the tank mix.</b>	
			See BETANEX label for rates to control broadleaf weeds. <b>No additives are recommended in the tank mix.</b>	

(1) Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

(2) Do not use crop oil concentrate. No additives are recommended in the tank mix. If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM [WARTHOG] 2 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

(3) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM [WARTHOG] 2 EC at full label rate with appropriate rate of crop oil concentrate.

**TABLE 14. CLETHODIM [WARTHOG] 2 EC PLUS BETANEX OR BETAMIX TANK MIX FOR THREE SEQUENTIAL APPLICATIONS FOR ANNUAL GRASS CONTROL (MICRO-RATE APPLICATION)**

PRODUCT	APPLICATION RATES/ACRE <sup>(1)</sup>		METHYLATED SEED OIL <sup>(2)</sup> (V/V)	
	ANNUAL GRASSES	GRASSES CONTROLLED (inches)	GROUND	AIR
CLETHODIM [WARTHOG] 2 EC + BETANEX or BETAMIX	2 to 3 fl. oz.	Green Foxtail (1-2)	1.5%	1.5%
	+	Yellow Foxtail (1-2)		
	8 to 12 fl. oz. <sup>(3)</sup>	Barnyardgrass (1-2)		
	or	Wild Oat (1-2)		
	8 to 12 fl. oz. <sup>(3)</sup>	Volunteer Cereals (1-2)		

(1) Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

(2) Always use a methylated seed oil at the listed rate (but not less than 1 pt./A) in the finished spray volume.

(3) Use 8 fl. oz./A rate when sugar beet are in the cotyledon to 4 leaf stage. Rate can be increased up to 12 fl. oz./A when the smallest sugar beet plants in the field are in the 4 true leaf stage or larger.

#### **Micro-Rate Applications to Sugar Beet Use Information**

Multiple micro-rate applications of CLETHODIM [WARTHOG] 2 EC in tank mixtures with reduced rates of BETANEX or BETAMIX and methylated seed oils may be applied by air or ground equipment to sugar beet to control early germinating annual grasses listed above. The rate of BETANEX or BETAMIX must not exceed 0.12 lb. ai./A (broadcast application) when in combination with these spray adjuvants. Note that maximum rate allowed varies depending on crop growth stage. The use of wetting agents or spray adjuvants with conventional rates (0.73 to 1.22 lb. ai./A) or multiple low rate (0.24 to 0.73 lb. ai./A) applications of BETANEX or BETAMIX is prohibited on

the BETANEX and BETAMIX master label. Favorable climatic conditions (good conditions for plant growth and development) are essential for adequate weed control. All use precautions and restrictions on the BETANEX and BETAMIX master labels must be followed.

#### **Micro-Rate Multiple Applications of CLETHODIM [WARTHOG] 2 EC Tank Mixes**

Apply CLETHODIM [WARTHOG] 2 EC in broadcast applications only at a rate of 2 to 3 fl. oz./A in tank mixture with either BETANEX or BETAMIX following the directions for use on the tank mix partner label. A minimum of three sequential applications of 2 fl. oz./A or a minimum of 2 sequential applications of 3 fl. oz./A should be utilized for CLETHODIM [WARTHOG] 2 EC tank mixtures. A minimum of 3 sequential applications of BETAMIX or BETANEX should be used. Accurate timing is essential; make initial application immediately after weeds emerge, and make repeat applications on 5 to 7 day intervals. If weed control is not adequate due to climatic conditions, spray coverage or other factors, return to conventional application rates of CLETHODIM [WARTHOG] 2 EC (6 to 8 fl. oz./A) and add rates of BETANEX or BETAMIX as directed on their label. When using conventional rates of BETANEX or BETAMIX in tank mixtures with CLETHODIM [WARTHOG] 2 EC, a spray adjuvant is not recommended.

#### **Use Precautions for Micro-Rate Applications: (See CLETHODIM [WARTHOG] 2 EC, BETANEX and BETAMIX master label for further use precautions.)**

Not all weeds will be adequately controlled, even with favorable climatic conditions. Conventional rates of CLETHODIM [WARTHOG] 2 EC, BETANEX or BETAMIX and/or hand labor may be required if multiple micro-rate applications do not adequately control weeds. Plugging of spray nozzles may be encountered due to the potential for formation of a precipitate in the spray solution that is often associated with micro-rate applications. J. Oliver Products, LLC will not be responsible for any nozzle plugging that may occur with the use of multiple micro-rate applications. Methylated seed oils must not be added if the BETANEX or BETAMIX rate exceeds 0.12 lb. ai/A broadcast, as the addition of methylated seed oils could increase the possibility of crop injury at dosage rates greater than 0.12 lb. ai/A.

#### **GROUND APPLICATION**

Use of sufficient spray volumes and pressure is essential to ensure complete coverage. Use a minimum of 10 gals. and a maximum of 20 gals. of spray solution per acre. Spray pressures should reflect a minimum of 30 psi and a maximum of 60 psi at the nozzle. Do not use flood nozzles.

#### **AERIAL APPLICATION**

Use of sufficient spray volumes is essential to ensure complete coverage. Use a minimum of 5 gals. and a maximum of 15 gals. of spray solution per acre.

**Table 15. TANK MIX APPLICATION OF CLETHODIM [WARTHOG] 2 EC AND FUNGICIDES FOR CONTROL OF GRASS WEEDS AND DISEASES IN SUGAR BEET**

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)
	ANNUAL GRASSES	PERENNIAL GRASSES	
CLETHODIM [WARTHOG] 2 EC + EMINENT®	6 to 8 fl. oz. + 13 fl. oz.	8 to 16 fl. oz. + 13 fl. oz.	1%

(1) If grass regrowth occurs, or an additional flush of new grass emerges, make a second application of CLETHODIM [WARTHOG] 2 EC alone (without a tank mix fungicide) according to the appropriate size and rate recommendations.  
 (2) Refer to CLETHODIM [WARTHOG] 2 EC and fungicide label for rates and weeds and diseases controlled.  
 (3) Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

**Table 16. TANK MIX APPLICATION OF CLETHODIM [WARTHOG] 2 EC AND INSECTICIDES FOR CONTROL OF GRASS WEEDS AND INSECTS IN ALFALFA, COTTON, MINT, PEANUT (INCLUDING PERENNIAL), SOYBEAN AND SUNFLOWER**

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE (V/V) <sup>(3)</sup>	CROP					
	ANNUAL GRASSES	PERENNIAL GRASSES		Alfalfa <sup>(4)</sup>	Cotton	Mint <sup>(4,5)</sup>	Peanut	Soybean	Sunflower
CLETHODIM [WARTHOG] 2 EC + ORTHENE® 75 S or ORTHENE 97	6 to 8 fl. oz. + 0.33 to 1.33 lbs. 0.25 to 1.0 lb.	8 to 16 fl. oz. + 0.33 to 1.33 lbs. 0.25 to 1.0 lb.	1%		X	X	X		
CLETHODIM [WARTHOG] 2 EC + ORTHENE 90 S <sup>(6)</sup>	6 to 8 fl. oz. + 0.25 to 1 lb.	8 to 16 fl. oz. + 0.25 to 1 lb.	1%		X	X	X	X	
CLETHODIM [WARTHOG] 2 EC + DANITOL® 2.4 EC	6 to 8 fl. oz. + 10 2/3 to 16 fl. oz.	8 to 16 fl. oz. + 10 2/3 to 16 fl. oz.	1%		X		X		
CLETHODIM [WARTHOG] 2 EC + ASANA XL®	6 to 8 fl. oz. + Refer to ASANA XL label	8 to 16 fl. oz. + Refer to ASANA XL label	1%						X
CLETHODIM [WARTHOG] 2 EC + WARRIOR®	6 to 8 fl. oz. + Refer to WARRIOR label	8 to 16 fl. oz. + Refer to WARRIOR label	1%						X
CLETHODIM [WARTHOG] 2 EC + WARRIOR	10 to 16 fl. oz. <sup>(7)</sup> + Refer to WARRIOR label	10 to 16 fl. oz. + Refer to WARRIOR label	1%	X					
CLETHODIM [WARTHOG] 2 EC + BAYTHROID®	10 to 16 fl. oz. <sup>(7)</sup> + Refer to BAYTHROID label	10 to 16 fl. oz. + Refer to BAYTHROID label	1%	X					
CLETHODIM [WARTHOG] 2 EC + DIMETHOATE®	10 to 16 fl. oz. <sup>(7)</sup> + Refer to DIMETHOATE label	10 to 16 fl. oz. + Refer to DIMETHOATE label	1%	X					

continued

**Table 16. TANK MIX APPLICATION OF CLETHODIM [WARTHOG] 2 EC AND INSECTICIDES FOR CONTROL OF GRASS WEEDS AND INSECTS IN ALFALFA, COTTON, MINT, PEANUTS (INCLUDING PERENNIAL), SOYBEAN AND SUNFLOWER (continued)**

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE (V/V) <sup>(3)</sup>	CROP					
	ANNUAL GRASSES	PERENNIAL GRASSES		Alfalfa <sup>(4)</sup>	Cotton	Mint <sup>(4,5)</sup>	Peanut	Soybean	Sunflower
CLETHODIM [WARTHOG] 2 EC + LORSBAN®	10 to 16 fl. oz. <sup>(7)</sup> + Refer to LORSBAN label	10 to 16 fl. oz. + Refer to LORSBAN label	1 to 2 pt. <sup>(8)</sup>	X					
CLETHODIM [WARTHOG] 2 EC + POUNCE®	10 to 16 fl. oz. <sup>(7)</sup> + Refer to POUNCE label	10 to 16 fl. oz. + Refer to POUNCE label	1%	X					

(1) If grass regrowth occurs, or an additional flush of new grass emerges, make a second application of CLETHODIM [WARTHOG] 2 EC alone (without a tank mix insecticide) according to the appropriate size and rate recommendations.

(2) Refer to CLETHODIM [WARTHOG] 2 EC and insecticide label for rates and weeds and insects controlled.

(3) Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

(4) Certain insecticides may cause temporary phytotoxic symptoms on alfalfa and mint foliage. Refer to the insecticide label for information. It is suggested that prior to using any of these insecticide/herbicide tank mixtures, that a small area of the field be first and observations for crop injury be made prior to treating the whole field.

(5) The CLETHODIM [WARTHOG] 2 EC rate should be 6 to 8 fl. oz./A for annual grass control in baby mint, minimum of 8 fl. oz./A for annual grass control in established mint and 8 to 16 fl. oz./A for perennial grass control. Crop oil concentrate should be added at rate of 1.0 to 2.0 pts./A.

(6) Insecticide tank mix use with ORTHENE 90 S in soybean is permitted only in a state having an approved Section 24(c) registration for ORTHENE 90 S use in soybean.

(7) The CLETHODIM [WARTHOG] 2 EC rate should be 6 to 8 fl. oz./A for annual grass control in seedling alfalfa.

(8) For the CLETHODIM [WARTHOG] 2 EC plus LORSBAN tank mix, reduce the adjuvant rate down to 1.0 pt./A when the LORSBAN rate is 1.0 pt./A or higher.

**Table 17. ROUNDUP READY VOLUNTEER CORN CONTROL IN ROUNDUP READY SOYBEAN WITH CLETHODIM [WARTHOG] 2 EC HERBICIDE TANK MIX**

Roundup Ready Volunteer Corn Height (inches)	CLETHODIM [WARTHOG] 2 EC Rate fl. oz./A	Glyphosate <sup>(1)</sup> rate for formulations with built in adjuvant	Adjuvant
<12	4	1.0 to 2.0 lb. ai./A (Approximately equivalent to 22 to 44 fl. oz./A of ROUNDUP Weather MAX)	Non-ionic surfactant @ 0.125 to 0.25% v/v plus ammonium sulfate @ 8.5 to 17 lbs. per 100 gals./ of carrier
12 to 18	5		
18 to 24	6		

Roundup Ready Volunteer Corn Height (inches)	CLETHODIM [WARTHOG] 2 EC Rate fl. oz./A	Glyphosate <sup>(1)</sup> rate for formulations without built in adjuvant	Adjuvant
<12	4	Up to 2.0 lb. ai./A (Equivalent to 32 to 64 fl. oz./A of ROUNDUP Original)	Crop oil concentrate @ 1 pt./A plus ammonium sulfate @ 8.5 to 17 lbs. per 100 gals. of carrier
12 to 18	5		
18 to 24	6		

(1) Glyphosate formulation must be labeled for use on Roundup Ready soybean.

**THE MOST RESTRICTIVE LABELING OF ANY PRODUCT USED IN A TANK MIX MUST BE FOLLOWED.**

- Apply only to actively growing grass and broadleaf weeds at recommended height or growth stage listed on each label.
- Apply under favorable soil moisture and humidity which exist a few days after rainfall or within seven days after irrigation.
- Tank mix applications may sometimes result in reduced grass control. If regrowth occurs, or an additional flush of new grass emerges, make a second application of CLETHODIM [WARTHOG] 2 EC, as specified in the respective size and rate tables.
- Do not tank mix CLETHODIM [WARTHOG] 2 EC when broadleaf weeds are tall and/or dense enough to prevent proper grass coverage.
- This tank mix may be applied postemergence to ROUNDUP READY soybean up through the full flowering stage. Do not apply less than 60 days before harvest.
- Avoid contact with foliage, green stems, or fruit crops, or any desirable plants and trees, other than soybean with the ROUNDUP READY gene as severe injury or destruction will result.
- Do not allow the CLETHODIM [WARTHOG] 2 EC plus ROUNDUP to mist, drip, drift or splash onto desirable vegetation as minute quantities of the tank mix can cause severe damage or destruction to the crops, plants or other areas on which treatment was not intended. The likelihood of injury occurring from drift of this product is greatest when winds are gusty or in excess of 5 miles per hour. Even under lesser wind velocities, avoid conditions that allow spray drift to occur such as combinations of spray pressure and nozzle type that will result in fine particles (mist) that are likely to drift.

**FALLOW LAND**

CLETHODIM [WARTHOG] 2 EC may be used to control annual and perennial grasses in land that has been left fallow the previous year and other non-producing agricultural areas. Apply CLETHODIM [WARTHOG] 2 EC at 6 to 8 fl. oz./A for annual grasses and 8 to 16 fl. oz./A for perennial grasses. When both grass and broadleaf weeds are the target pest, CLETHODIM [WARTHOG] 2 EC may be tank mixed with 2,4-D ester or BANVEL® SGF for broad spectrum control. When both annual and perennial grasses occur in the same field, use a minimum of 8 fl. oz./A. CLETHODIM [WARTHOG] 2 EC rate.

**USE INFORMATION:**

- Use a minimum spray volume of 5 gals./A for aerial applications and 15 gals./A for ground applications.
- Apply only to actively growing grasses when the first grass reaches the recommended weed height as specified by the Recommendations for Annual and Perennial Grasses section of this label.
- Annual grasses that emerge after the CLETHODIM [WARTHOG] 2 EC application will not be controlled, and a second application may be necessary.
- The control of perennial grasses may require more than 1 application in non-tilled areas.
- Do not plant any crop for 30 days after application unless clethodim is registered for use in that crop.
- Do not apply to grasses that have tillered, formed seedheads or exceeded recommended growth stage.
- Do not use flood jet nozzles.
- Do not apply to drought stressed grasses.
- Do not mow area for 2 weeks prior to or after the CLETHODIM [WARTHOG] 2 EC application.

**TABLE 18. CLETHODIM [WARTHOG] 2 EC IN TANK MIXES TO CONTROL ANNUAL AND PERENNIAL GRASSES IN FALLOW LAND**

PRODUCT	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(2)</sup> (V/V)	
	Annual Grasses	Perennial Grasses	Ground	Air
CLETHODIM [WARTHOG] 2 EC + 2,4-D ester or BANVEL SGF	6 to 8 fl. oz. + 0.5 lb./A or See BANVEL SGF label for rates	8 to 16 fl. oz.	1%	1%

(1) Refer to CLETHODIM [WARTHOG] 2 EC label for weed height and species control. Review BANVEL SGF and 2,4-D labels for crop restrictions, use rates and weeds controlled.  
(2) Always use a crop oil concentrate or methylated seed oil containing at least 15% emulsifier at the listed rate (but not less than 1 pt./A) in the finished spray volume.

GRASS SUPPRESSION IN NON-CROP AREAS WITH CLETHODIM [WARTHOG] 2 EC			
GRASS SPECIES	WEED STAGE	RATE FL. OZ./ ACRE	HIGH RATE
Annual and perennial grasses that exceed height claimed for control on height chart above.	Up to and including grasses in the seed head stage.	12	16

- Do not apply as part of a tank mix when applying CLETHODIM [WARTHOG] 2 EC for grass suppression.
- Add a crop oil concentrate at 1 qt./A by ground to the finished spray volume.

**TABLE 19. CLETHODIM [WARTHOG] 2 EC FOR THE CONTROL AND/OR SUPPRESSION OF TALL FESCUE IN NATIVE PRAIRIE WARM-SEASON GRASS RESTORATION PROJECTS**

PRODUCT	PRODUCT RATES	GRASS WEEDS CONTROLLED/SUPPRESSED		WEED STAGES
		Common Name	Scientific Name	
CLETHODIM [WARTHOG] 2 EC	10 to 12 fl. oz./A	Tall Fescue	<i>Festuca arundinacea</i>	4 to 6 inches tall (40 to 60% green-up)

**Adjuvant:** CLETHODIM [WARTHOG] 2 EC must be applied with crop oil concentrate at 1 qt./A, plus a spray grade ammonium sulfate at 2.5 to 4 lbs./A. Recommended Mixing Order: Thoroughly mix spray grade ammonium sulfate in water, add CLETHODIM [WARTHOG] 2 EC, then add crop oil concentrate.

**SPECIAL APPLICATION INSTRUCTIONS/PRECAUTIONS:**

- Burn or mow fields a minimum of 3 weeks prior to application to remove excess crop residue. Apply in the spring, at 40 to 60% tall fescue green-up, prior to emergence of warm-season grasses. Do not mow area for 2 weeks after the CLETHODIM [WARTHOG] 2 EC application.
- Apply in a minimum of 15 to 20 gals. of water per acre at a spray pressure of 40 to 60 PSI at the nozzle.
- Apply using flat fan or hollow cone nozzles. Do not use flood jet nozzles.
- Apply only to fields that have warm-season grasses established for 2 years. Applications of CLETHODIM [WARTHOG] 2 EC to emerged warm-season grasses may cause injury. Do not apply to warm-season grasses grown for seed.
- Do not graze treated fields or feed treated forage and or hay to livestock. Do not plant any crop for 30 days after application, unless clethodim is registered for use in that crop.

**NOTE:** CLETHODIM [WARTHOG] 2 EC applications are most effective if applied when average nighttime temperatures are consistently greater than or equal to 47°F.

**TABLE 20. CLETHODIM [WARTHOG] 2 EC FOR THE SUPPRESSION OF TALL FESCUE SEED-HEADS IN NON-PRODUCING AGRICULTURAL AREAS**

Product	Product Rate	Suppression	Application Timing
CLETHODIM [WARTHOG] 2 EC	1 1/2 to 2 fl. oz./A	Tall Fescue Seed-Heads ( <i>Festuca arundinacea</i> )	(50 to 90% Tall Fescue green-up)
<b>ADJUVANT:</b> CLETHODIM [WARTHOG] 2 EC must be applied with crop oil concentrate at 1 qt./A, plus a spray grade ammonium sulfate at 2.5 to 4 lb./A. <b>Recommended Mixing Order:</b> Thoroughly mix spray grade ammonium sulfate in water, add CLETHODIM [WARTHOG] 2 EC Herbicide, then add crop oil concentrate.			

**SPECIAL APPLICATION INSTRUCTIONS/PRECAUTIONS:**

- Apply at 50 to 90% tall fescue green-up.
- Use the higher CLETHODIM [WARTHOG] 2 EC rate if less tall fescue green matter is present.
- Do not mow area for two weeks after the CLETHODIM [WARTHOG] 2 EC application.
- Apply in a minimum of 15 to 20 gals. of water per acre at a spray pressure of 40 to 60 psi at the nozzle. Apply using flat fan or hollow cone nozzles. Do not use flood nozzles.
- 2-4-D ester maybe added to this tank mix for broadleaf control (see 2,4-D ester label for weeds controlled).
- Do not graze treated fields or feed treated forage and/or hay to livestock. Do not plant any crop for 30 days after application, unless clethodim is registered for use in that crop.



## ORNAMENTALS

For ornamental plant uses, CLETHODIM [WARTHOG] 2 EC can be used to control labeled grass weeds in greenhouses, lathhouses, shadehouses, and around outdoor ornamentals, including nurseries, parks, roadside plantings, and structure landscapes.

### IMPORTANT

CLETHODIM [WARTHOG] 2 EC successfully controls weeds in newly transplanted and established non-grassy ornamentals. Plant tolerance to CLETHODIM [WARTHOG] 2 EC at labeled rates has been found to be acceptable for the indicated genera and species listed below. Due to variability within species, crop growth stage, environmental conditions, and application techniques, it is recommended that the user determine if herbicide can be used safely on a few plants prior to widespread application. Neither the seller nor the manufacturer of CLETHODIM [WARTHOG] 2 EC have investigated the safety factor to ornamental plants not listed on the label.

The following plants have shown a tolerance for CLETHODIM [WARTHOG] 2 EC applications:

### ORNAMENTAL TREES

COMMON NAME	SCIENTIFIC NAME
Alder, Red	<i>Alnus rubra</i>
Ash	<i>Fraxinus</i> spp.
Basswood	<i>Tilia</i> spp.
Birch, European White	<i>Betula pendula</i>
Birch, River	<i>Betula nigra</i>
Birch, White	<i>Betula papyrifera</i>
Crabapple, Flowering	<i>Malus halliana</i>
Dogwood, Flowering	<i>Cornus florida</i>
Golden Chain Tree	<i>Laburnum anagyroides</i>
Maples	<i>Acer</i> spp.
Mulberry, White	<i>Morus alba</i>
Oaks	<i>Quercus</i> spp.
Olive, Wild	<i>Elaeagnus angustifolia</i>
Redbud, Eastern	<i>Cercis Canadensis</i>
Sweet Gum, American	<i>Liquidambar styraciflua</i>

### GROUND COVERS

COMMON NAME	SCIENTIFIC NAME
Bugleweed, Carpet	<i>Ajuga reptans</i>
Ivy, English	<i>Hedera helix</i>
Japanese Spurge	<i>Pachysandra terminalis</i>
Lilyturf	<i>Liriope muscari</i>
Moneywort	<i>Lysimachia nummularia</i>
Mondo Grass, White	<i>Ophiopogon jaburan</i>
Mondo Grass Dwarf	<i>Ophiopogon japonicus</i>
Periwinkle, Lesser	<i>Vinca minor</i>

## GARDEN FLOWERS AND PLANTS

COMMON NAME	SCIENTIFIC NAME
Ageratum	<i>Ageratum</i> spp.
Alyssum*, Sweet	<i>Lobularia maritima</i>
Asparagus Fern	<i>Asparagus setaceus</i>
Bleeding Heart	<i>Dicentra spectabilis</i>
Cast Iron Plant	<i>Aspidistra elatior</i>
Chrysanthemum	<i>Chrysanthemum</i> spp.
Cinquefoil	<i>Potentilla</i> spp.
Coleus	<i>Coleus</i> spp.
Coralbells	<i>Heuchera sanguinea</i>
Cranesbill	<i>Geranium</i> spp.
Dahlia	<i>Dahlia</i> spp.
Daisy, Trailing African	<i>Osteospermum fruticosum</i>
Daylily	<i>Hemerocallis</i> spp.
Dusty Miller	<i>Senecio cineraria</i>
Euonymus	<i>Euonymus</i> spp.
Gazania	<i>Gazania</i> spp.
Geranium, House	<i>Pelargonium hortorum</i>
Heather, False	<i>Cuphea hyssopifolia</i>
Hosta	<i>Hosta fortunei</i>
Iris	<i>Iris</i> spp.
Jasmine Tobacco	<i>Nicotiana glauca</i>
Loosestrife	<i>Lythrum salicaria</i>
Marigold	<i>Tagetes</i> spp.
Partridgeberry	<i>Mitella repens</i>
Petunia*	<i>Petunia hybrida</i>
Phlox	<i>Phlox</i> spp.
Pinks	<i>Dianthus</i> spp.
Portulaca	<i>Portulaca grandiflora</i>
Salvia	<i>Salvia</i> spp.
Saxifrage	<i>Saxifraga</i> spp.
Sedum	<i>Sedum</i> spp.
Selloum	<i>Philodendron selloum</i>
Snapdragon*	<i>Antirrhinum majus</i>
Sweet Flag	<i>Acorus gramineus</i>
Tickseed	<i>Coreopsis grandiflora</i>
Touch-Me-Not	<i>Impatiens</i> spp.
Verbena	<i>Verbena</i> spp.
Violet	<i>Viola</i> spp.
Yarrow, Common	<i>Achillea millefolium</i>
Zinnia	<i>Zinnia elegans</i>
*Slight foliage or flower speckling has been observed on these species.	

## SHRUBS

COMMON NAME	SCIENTIFIC NAME
Abelia	<i>Abelia</i> spp.
Anise, Purple	<i>Illicium floridanum</i>
Aucuba	<i>Aucuba</i> spp.
Azalea*	<i>Rhododendron</i> spp.
Bamboo	<i>Bambusa</i> spp.
Barberry, Japanese	<i>Berberis thunbergii</i>
Barberry, Magellan	<i>Berberis buxifolia</i>
Bayberry	<i>Myrica pensylvanica</i>
Bottlebrush	<i>Callistemon citrinus</i>
Boxwood, Common	<i>Buxus sempervirens</i>
Camellia, Common	<i>Camellia japonica</i>
Candytuft	<i>Iberis sempervirens</i>
Cleyera	<i>Cleyera japonica</i>
Coralberry	<i>Ardisia crenata</i>
Crape Myrtle	<i>Lagerstroemia indica</i>
Coyote Brush	<i>Baccharis pilularis</i>
Fig, Creeping	<i>Ficus pumila</i>
Gardenia	<i>Gardenia</i> spp.
Holly	<i>Ilex</i> spp.
Honeysuckle	<i>Lonicera</i> spp.
Indian Hawthorn	<i>Raphiolepis indica</i>
Jasmine	<i>Jasminum</i> spp.
Jasmine, Asiatic	<i>Trachelospermum asiaticum</i>
Jasmine, Star	<i>Trachelospermum jasminoides</i>
Juniper	<i>Juniperus</i> spp.
Lantana	<i>Lantana</i> spp.
Nandina* Bamboo, Heavenly	<i>Nandinia domestica</i>
Oleander, Common	<i>Nerium oleander</i>
Oregon Grape	<i>Mahonia aquifolium</i>
Photinia	<i>Photinia</i> spp.
Pittosporum	<i>Pittosporum</i> spp.
Podocarpus	<i>Podocarpus</i> spp.
Privet	<i>Ligustrum</i> spp.
Pyracantha	<i>Pyracantha</i> spp.
Rhododendron	<i>Rhododendron</i> spp.
Rose	<i>Spiraea bumalda</i>
Sweet Olive	<i>Osmanthus fragrans</i>
Viburnum	<i>Viburnum tinus</i>
Wisteria	<i>Wisteria</i> spp.
Yellow Sage/Shrub Verbena	<i>Lantana camara</i>
*Slight foliage or flower speckling has been observed on these species.	

ANNUAL GRASSES IN ORNAMENTALS				
GRASS SPECIES	SCIENTIFIC NAME	WEED* HEIGHT INCHES	RATE FL. OZ./ACRE <sup>(1)</sup>	HIGH RATE <sup>(2)</sup>
Barnyardgrass	<i>Echinochloa crus-galli</i>	2 to 8	8	16
Broadleaf Signalgrass	<i>Bracharia platyphylla</i>	2 to 6	8	16
Brome				
California	<i>Bromus carinatus</i>	2 to 6	8	16
Cheat	<i>Bromus secalinus</i>	2 to 6	8	16
Downy	<i>Bromus tectorum</i>	2 to 6	8	16
Ripgut	<i>Bromus diandrus</i>	2 to 6	8	16
Canarygrass	<i>Phalaris canariensis</i>	1 to 4	8	16
Crabgrass				
Hairy	<i>Digitaria adscendens</i>	2 to 6**	8	16
Large	<i>Digitaria sanguinalis</i>	2 to 6**	8	16
Smooth	<i>Digitaria ischaemum</i>	2 to 6**	8	16
Southern	<i>Digitaria ciliaris</i>	2 to 6**	8	16
Crowfootgrass	<i>Dactyloctenium aegyptium</i>	2 to 6**	8	16
Fall Panicum	<i>Panicum dichotomiflorum</i>	2 to 8	8	16
Field Sandbur	<i>Cenchrus incertus</i>	2 to 6	8	16
Foxtail				
Giant	<i>Setaria faberi</i>	2 to 12	8	16
Green	<i>Setaria viridis</i>	2 to 8	8	16
Yellow	<i>Setaria glauca</i>	2 to 8	8	16
Goosegrass	<i>Eleusine indica</i>	2 to 6**	8	16
Itchgrass	<i>Rottboellia cochlin</i>	2 to 6	8	16
Junglerice	<i>Echinochloa colona</i>	2 to 6	8	16
Lovegrass (Stinkgrass)	<i>Eragrostis ciliaris</i>	2 to 6	8	16
Rabbitsfootgrass	<i>Polypogon monspeliensis</i>	1 to 4	8	16
Red Rice	<i>Oryza sativa</i>	1 to 3	8	16
Rygrass				
Hardy	<i>Lolium remotum</i>	2 to 6	8	16
Italian	<i>Lolium multiflorum</i>	2 to 6	8	16
Seedling Johnsongrass	<i>Sorghum halepense</i>	4 to 10	8	16
Shattercane	<i>Sorghum bicolor</i>	6 to 18	8	16
Southwestern Cupgrass	<i>Eriochloa gracilis</i>	2 to 6	8	16
Sprangletop				
Amazon	<i>Leptochloa panicoides</i>	2 to 6	8	16
Bearded	<i>Leptochloa fascicularis</i>	2 to 6	8	16
Mexican	<i>Leptochloa uninervia</i>	2 to 6	8	16
Red	<i>Leptochloa filiformis</i>	2 to 6	8	16
Texas Panicum	<i>Panicum texanum</i>	2 to 6	8	16
Volunteer Cereals				
Barley	<i>Hordeum vulgare</i>	2 to 6	8	16
Oats	<i>Avena sativa</i>	2 to 6	8	16
Rye	<i>Secale cereale</i>	2 to 6	8	16
Wheat	<i>Triticum aestivum</i>	2 to 6	8	16
Volunteer Corn	<i>Zea mays</i>	4 to 12	6	8
Volunteer Corn	<i>Zea mays</i>	12 to 24	8	16
Volunteer Grain Sorghum	<i>Sorghum bicolor</i>	8 to 12	8	16
Wild Oats	<i>Avena fatua</i>	2 to 6	8	16
Wild Proso Millet	<i>Panicum miliaceum</i>	2 to 10	8	16
Witchgrass	<i>Panicum capillare</i>	2 to 8	8	16
Woolly Cupgrass	<i>Eriochloa villosa</i>	2 to 8	8	16
<ul style="list-style-type: none"> <li>• Apply only to actively growing grasses at recommended weed heights.</li> <li>• Apply when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.</li> <li>• Use the high rate under heavy grass pressure and/or when grasses are at maximum height.</li> </ul>				
*Generally occurs between 3-leaf stage and tillering.				
**Length of lateral growth.				
(1) 8 fl. oz./A = approximately 0.2 fl. oz./1000 sq. ft.				
(2) 16 fl. oz./A = approximately 0.4 fl. oz./1000 sq. ft.				
Add a non-ionic surfactant containing at least 80% active ingredient at the rate of 1 pt. per 50 gals. (0.25% v/v).				

**ANNUAL BLUEGRASS CONTROL WITH  
CLETHODIM [WARTHOG] 2 EC IN ORNAMENTALS**

GRASS SPECIES	WEED STAGE	RATE FL. OZ./ ACRE	HIGH RATE
Annual Bluegrass ( <i>Poa annua</i> )	to 4-leaf	6	16
<ul style="list-style-type: none"> <li>• Apply under favorable soil moisture and humidity that exists within a few days after rainfall or within 7 days after irrigation. Grass needs to be actively growing at time of application(s).</li> <li>• Apply at weed stage indicated on the label, as reduced control can be expected with more mature annual bluegrass.</li> <li>• Use the high rate under heavy grass pressure and/or when annual bluegrass is more mature.</li> <li>• Add a non-ionic surfactant containing at least 80% active ingredient at the rate of 1 pt. per 50 gals. (0.25% v/v).</li> </ul>			

**PERENNIAL GRASSES**

GRASS SPECIES	WEED HEIGHT (inches)	RATE FL. OZ./ ACRE <sup>(1)</sup>	HIGH RATE <sup>(2)</sup>
<b>Bermudagrass (<i>Cynodon dactylon</i>)</b>			
First Application	3 (or up to 6" runners)	8	16
Repeat Application(s) (if regrowth occurs)	3 (or up to 6" runners)	8	16
<b>Quackgrass (<i>Elytrigia repens</i>)</b>			
First Application	4 to 8	8	16
Repeat Application(s) (if regrowth occurs)	4 to 8	8	16
<b>Rhizome Johnsongrass (<i>Sorghum halepense</i>)</b>			
First Application	12 to 24	8	16
Repeat Application(s) (if regrowth occurs)	6 to 18	6	8
<b>Wirestem Muhly (<i>Muhlenbergia frondosa</i>)</b>			
First Application	4 to 8	8	16
Repeat Application(s) (if regrowth occurs)	4 to 8	8	16
<ul style="list-style-type: none"> <li>• Apply only to actively growing grasses at recommended weed heights.</li> <li>• Apply when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.</li> <li>• Use the high rate under heavy grass pressure and/or when grasses are at maximum height.</li> </ul>			
(1) 8 fl. oz./A = approximately 0.2 fl. oz./1000 sq. ft.			
(2) 16 fl. oz./A = approximately 0.4 fl. oz./1000 sq. ft.			
Add a non-ionic surfactant containing at least 80% active ingredient at the rate of 1 pt. per 50 gals. (0.25% v/v)			

## STORAGE AND DISPOSAL

### PROHIBITIONS

Do not contaminate water, food or feed by storage, disposal or cleaning of equipment.

Open dumping is prohibited.

### PESTICIDE STORAGE

Keep pesticide in original container. Do not put concentrate or dilute into food or drink containers.

Store in cool, dry place. Do not store diluted spray.

**Emergency Response:** For help with any spill, leak, fire or exposure involving this material, call day or night 1-800-892-0099.

### PESTICIDE DISPOSAL

Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

### CONTAINER DISPOSAL

Nonrefillable container. Do not refill or reuse container. Triple rinse container (or equivalent) promptly after emptying. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

ASANA® - Reg. TM of DuPont

AUTHORITY BROADLEAF® - Reg. TM of E.I. duPont de Nemours & Co. Inc.

BANVEL® - Reg. TM of BASF Corporation

BASAGRAN® - Reg. TM of BASF AG.

BAYTHROID® - Reg. TM Bayer Corporation

BETAMIX® - Reg. TM of The Aventis Group

BETANEX® - Reg. TM of The Aventis Group

BLAZER® - Reg. TM of United Phosphorus, Inc.

BRONATE®, BRONATE ADVANCED™ - Reg. TM of Bayer Crop Science

BUCTRIL® - Reg. TM of Bayer Corporation

CANOPY XL® - Reg. TM of E.I. duPont de Nemours & Co. Inc.

CLASSIC® - Reg. TM of E.I. duPont de Nemours & Co., Inc.

COBRA® - Reg. TM of Valent U.S.A. Corporation

DANITOL® - Reg. TM of Sumitomo Chemical Co., Ltd.

DUAL®, DUAL II® AND DUAL MAGNUM® - Reg. TMs of Syngenta Corporation

EMINENT® - Reg. TM of Sipcam Agro USA, Inc.

FIRSTRATE® - Reg. TM of Dow AgroSciences LLC

FLEXSTAR® - Reg. TM of Syngenta Corporation

FRONTROW™ - TM of Dow AgroSciences LLC

IMI-CORN® - Reg. TM of BASF Corporation

LIBERTY LINK® - Reg. TM of The Aventis Group

LORSBAN® - Reg. TM of Dow AgroSciences LLC

ORTHENE® - Reg. TM of OMS Investments, Inc.

POUNCE® - Reg. TM FMC Corporation

PROWL® - Reg. TM of BASF Corporation

PURSUIT® and PURSUIT DG® - Reg. TMs of BASF Corporation

RAPTOR® - Reg. TM of BASF Corporation

RESOURCE® - Reg. TM of Valent U.S.A. Corporation

RHONOX® - Reg. TM of Nufam Americas Inc.

ROUNDUP READY® and ROUNDUP ULTRA® - Reg. TMs of Monsanto Company

SELECT® - Reg. TM of Valent U.S.A. Corporation

SENCOR® - Reg. TM of Bayer Corporation

STINGER® - Reg. TM of Dow AgroSciences LLC

STORM® - Reg. TM of BASF Corporation

SYNCHRONY® STS™ - TM and Reg. TM of E.I. duPont de Nemours & Co. Inc.

VALOR® - Reg. TM of Valent U.S.A. Corporation

TURBO® - Reg. TM of Bayer Corporation

WARRIOR® - Reg. TM of Syngenta Corporation

## RETURNABLE KEG

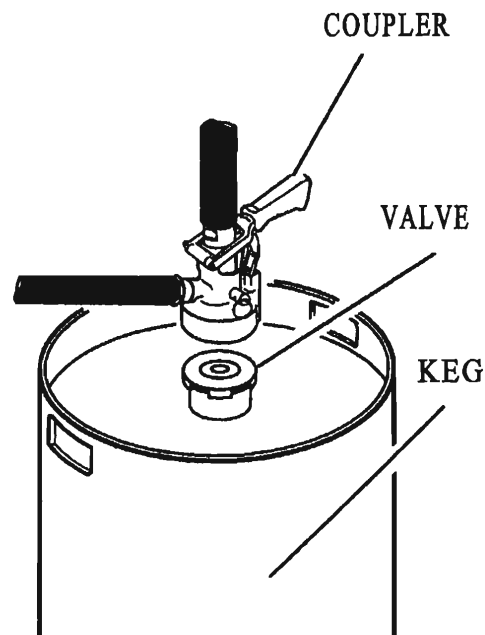
**Description:** This keg is a closed-system, refillable container designed for easy handling and convenient dispensing of product with no container disposal.

**Construction:** The keg is made of all stainless steel. Both the gaskets and seals are Viton and are compatible with the J. Oliver Products, LLC product.

**Pump System:** With the versatility of the keg, either a mechanical pump or an air pressure system may be used to dispense the product.

**Coupler:** A specific dry-disconnect coupler is required for dispensing product from the keg. This coupler is available through local agricultural equipment suppliers.

**Container Capacity:** 15 gallons or 56.7 liters (by weight)



## ATTENTION!

This is a closed-system container. Do not try to remove the valve from the keg. The coupler required for removal of product is available from local agricultural equipment suppliers. The keg contains tamper evident seals that, if broken, will incur a fee for the user of the keg. Both the coupler and the valve are designed for one-way operation only. Never try to pump any type of material back into the keg.

## DIRECTIONS FOR USE

The proper coupler must be attached and engaged before removing any product from the keg. Either a mechanical pump or an air pressure system may be used and connected to the 1-inch NPT thread on the top of the coupler.

**IMPORTANT!** Attach a hose or pump to the coupler before engaging coupler. This will prevent the user from being splashed in the event that pressure build-up in the keg forces liquid up through the coupler.

### To attach and engage the coupler:

1. Pull top of black dust cover back to expose head of valve. The bottom ring of the black dust cover will still be attached to the neck of the valve. Save the dust cover for reuse when returning keg.
2. Before engaging the coupler, securely attach a hose or pump to the threaded connection.
3. Twist coupler onto valve on keg and engage coupler by pulling handle straight out to unlock and then pushing handle down into lower position to open internal valve. Handle will automatically lock in place.
4. Secure and engage coupler by pulling handle straight out to unlock and then pushing handle down into lower position to open internal valve. Handle will automatically lock in place.
5. You are now ready to begin the pumping operation.

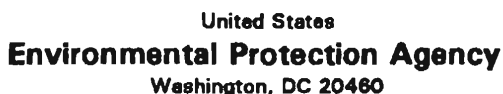
### To remove coupler from container:

1. Release coupler by pulling handle straight out to unlock and then lifting handle into upper position. Handle will automatically lock in place.
2. Lift coupler from keg. As coupler clears top of valve, pull coupler sideways and lift it off the valve.
3. Wipe valve off and replace dust cover.
4. Flush coupler with water.
5. Wipe coupler and store in a clean place.
6. Properly dispose of cleaning towels and rinsate.

## RETURNING KEGS

Clean the outside of the keg with water or soap before returning the keg to the distributor. Leave all J. Oliver Products, LLC product labels and stickers securely attached. All J. Oliver Products, LLC product labels, stickers and other information must remain on the keg in order to comply with both State and Federal regulations.

All J. Oliver Products, LLC kegs are tracked using the individual keg serial number stamped in the top of the keg. Distributors are responsible for these kegs that have been assigned to them. Return this keg to the distributor from which it was purchased. Notify the distributor if the keg cannot be returned by the specific time.



<input type="checkbox"/>	Registration
<input type="checkbox"/>	Amendment
<input checked="" type="checkbox"/>	Other

**OPP Identifier Number**

## Application for Pesticide - Section I

1. Company/Product Number 83222-30	2. EPA Product Manager	3. Proposed Classification  <input type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) Clethodim 2 EC Herbicide	PM# 23	
5. Name and Address of Applicant (Include ZIP Code)  J. Oliver Products, LLC c/o Biologic, Inc. 115 Obtuse Hill Road Brookfield, CT 06804 <input type="checkbox"/> Check if this is a new address	6. <b>Expedited Review.</b> In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. _____ Product Name _____	

## Section - II

<input type="checkbox"/>	Amendment - Explain below.	<input checked="" type="checkbox"/>	Final printed labels in response to Agency letter dated _____
<input type="checkbox"/>	Resubmission in response to Agency letter dated _____	<input type="checkbox"/>	"Me Too" Application.
<input checked="" type="checkbox"/>	Notification - Explain below.	<input type="checkbox"/>	Other - Explain below.

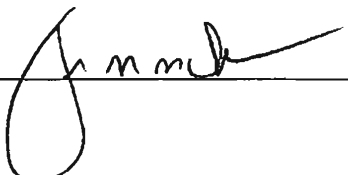
**Explanation:** Use additional page(s) if necessary. (For section I and Section II.)

This is a notification to 1) add an alternate brand name of "Warthog 2 EC Herbicide" and 2) add the package size of 2.5 gallons to this registration per PR Notice 98-10. This notification is consistent with the provisions of PR Notice 98-10 and the EPA regulations at 40 CFR 152.46 and no other changes have been made to the labeling or the confidential statement of formula of this product. I understand that it is a violation of 18 U.S.C. Sec. 1001 to willfully make any false statement to EPA. I further understand that if this notification is not consistent with the terms of PR Notice 98-10 and 40 CFR 152.46 this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

### Section - III

1. Material This Product Will Be Packaged In:			
Child-Resistant Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	2. Type of Container <input type="checkbox"/> Metal <input type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____
* Certification must be submitted		If "Yes" Unit Packaging wgt.      No. per container	If "Yes" Package wgt      No. per container
3. Location of Net Contents Information		4. Size(s) Retail Container	5. Location of Label Directions
<input type="checkbox"/> Label <input type="checkbox"/> Container		1, 2.5 gal.	<input type="checkbox"/> on label
6. Manner in Which Label is Affixed to Product		<input type="checkbox"/> Lithograph <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled	
		<input type="checkbox"/> Other _____	

## Section - IV

1. Contact Point <i>(Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)</i>		
Name Jane M. Miller	Title Agent	Telephone No. (Include Area Code) (203) 740-1200
<b>Certification</b> I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.		6. Date Application Received (Stamped)
2. Signature 	3. Title Agent	
4. Typed Name Jane M. Miller	5. Date August 6, 2010	



August 6, 2010

Document Processing Desk (NOTIF)  
Office of Pesticide Programs (7504P)  
US Environmental Protection Agency  
One Potomac Yard  
2777 S. Crystal Drive  
Room S-4900, 4<sup>th</sup> Floor  
Arlington, VA 22202

Attention: Ms. Kathryn Montague (PM #23)

Re: "Clethodim 2 EC Herbicide"; EPA Reg. No. 83222-30  
Notification to add an Alternate Brand Name and add a Package Size

Dear Ms. Montague:

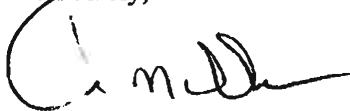
On behalf of J. Oliver Products, LLC please find enclosed an Application for Pesticide Notification to 1) add the alternate brand name of "Warthog 2 EC Herbicide" and 2) to add the container size of 2.5 gallons to the label as well. The current Storage and Disposal instructions are suitable for either a 1 or 2.5 gallon container.

The following documents are enclosed to process this Notification:

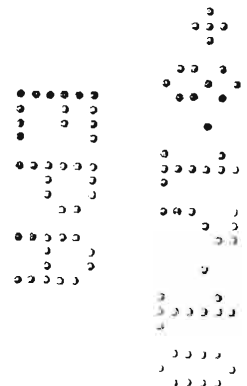
1. Application for Pesticide Notification (8570-1)
2. One (1) copy of the proposed label with the new brand name and the additional container size of 2.5 gallons listed.

Should you have any questions, or wish to reach me, please feel free to contact our office at 203-740-1200.

Sincerely,



Jane Miller  
Agent to J. Oliver Products, LLC



# Material to be added to an e-Jacket/Jacket

Reg. No. 83222-30

Description: New Product

1. ☐ Placement within the e-Jacket/jacket:

☐ Default: (chronological, top = newest)

☐ File Location: (PDF page number, i.e., "before page 45")

2. ☒ Send to Data Extraction contractors this material:

☒ Newly stamped accepted label

☐ Notification

☒ New CSF

☐ Other: \_\_\_\_\_

Please IMAGE  
CLIPPED  
PAGES!

3. Attach this coversheet to the top of the material or jacket. It *must* be well organized and clipped together, NOT STAPLED. Then give the material with this coversheet to staff in the Information Services Center (Room S-4900).

Reviewer's Name: James Stone

Phone: 305 7391 Division: RD/HB

Date: \_\_\_\_\_



U.S. ENVIRONMENTAL PROTECTION AGENCY  
Office of Pesticide Programs  
Registration Division (7505P)  
1200 Pennsylvania Ave., NW  
Washington, D.C. 20460

EPA Reg.

Number:

83222-30

Date of Issuance:

MAY 20 2010

NOTICE OF PESTICIDE:

☒ Registration  
☐ Reregistration  
(under FIFRA, as amended)

Term of Issuance:

Conditional

Name of Pesticide Product:

Clethodim 2 EC Herbicide

Name and Address of Registrant (include ZIP Code):

J. OLIVER PRODUCTS, LLC  
c/o BIOLOGIC, INC.  
115 OBTUSE HILL ROAD  
BROOKFIELD, CT 06804

~~Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.~~

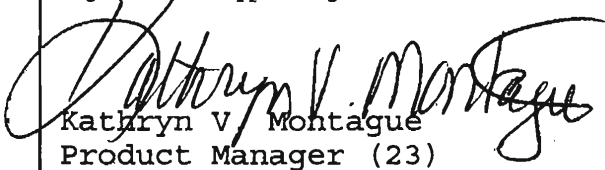
On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act. Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

1. Submit and/or cite all data required for registration/reregistration of your product when the Agency requires all registrants of similar products to submit data.
2. Make the following label changes listed below before you release the product for shipment:
  - a. Add the phrase, "EPA Reg. No. 83222-30".

Signature of Approving Official:

Date:

  
Kathryn V. Montague  
Product Manager (23)  
Herbicide Branch  
Registration Division (7505P)

MAY 20 2010

page 2

EPA Reg. No. 83222-30

b. Delete the term "Recommendations" in headings on the labeling. This term implies that the directions and restrictions do not all have to be followed as specified on the label.

3. Submit one (1) copy of your final printed labeling before you release the product for shipment. Refer to the A-79 enclosure for a further description of final printed labeling.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

**ACCEPTED  
with COMMENTS  
In EPA Letter Dated:**

MAY 20 2010

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
as amended, for the pesticide  
registered under EPA Reg. No.

# CLETHODIM 2 EC HERBICIDE

83222-30

Active Ingredient	By Wt.
*Clethodim.....	26.4%
Other Ingredients.....	73.6%
Total.....	100.0%

Contains Petroleum Distillates

\*(E)-2-[1-[(3-chloro-2-propenyl)oxy]imino]propyl]-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexen-1-one

Contains 2.0 lbs. clethodim per gal.

**KEEP OUT OF REACH OF CHILDREN**

## WARNING - AVISO

### SEE NEXT PAGE FOR ADDITIONAL PRECAUTIONARY STATEMENTS

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

Manufactured for:  
**J. Oliver Products, LLC**  
3187 Robertson Gin Road  
Hernando, MS 38632

Made in U.S.A.

EPA Reg. No. 83222-XX  
EPA Est. No. XXXXX-XX-XXX

**NET CONTENTS 1 GALLON**

**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS & DOMESTIC ANIMALS  
WARNING**

Causes substantial but temporary eye irritation. Avoid contact with skin. Do not get in eyes, on skin, or on clothing. Harmful if swallowed or inhaled. Avoid breathing vapors or spray mist. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

<b>FIRST AID</b>	
<b>If in eyes:</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If on skin or clothing:</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If swallowed:</b>	<ul style="list-style-type: none"> <li>• Immediately call a poison control center or doctor.</li> <li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>• Do not give any liquid to the person.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If inhaled:</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<p style="text-align: center;"><b>HOT LINE NUMBER</b></p> <p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact <b>[enter phone number]</b> for emergency medical treatment information.</p>	
<p style="text-align: center;"><b>NOTE TO PHYSICIANS</b></p> <p>Ingestion of this product or subsequent vomiting can result in aspiration of light hydrocarbon liquid, which can cause pneumonitis. If ingested, probable mucosal damage may contraindicate the use of gastric lavage.</p>	

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category G on an EPA chemical resistance category selection chart.

**Applicators and other handlers must wear:** long-sleeved shirt and long pants, chemical-resistant gloves such as Barrier Laminate or Viton ≥ 14 mils, shoes plus socks, and protective eyewear.

**Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.** Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

#### **USER SAFETY RECOMMENDATIONS**

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

#### **ENVIRONMENTAL HAZARDS**

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply where runoff is likely to occur. Do not apply where weather conditions favor drift from areas treated. Do not contaminate water when disposing of equipment washwater or rinsate.

The use of this product may pose a hazard to the federally designated endangered species of Solano Grass and Wild Rice. Use of this product is prohibited in the following areas where the species are known to exist:

Solano Grass: Solano County, California: the vernal lakes area bounded by the Union Pacific Railroad and Hastings Road to the north, Highway 113 to the east, Highway 12 to the south, and Travis Air Force Base to the west.

Wild Rice: Hays County, Texas.

#### **PHYSICAL OR CHEMICAL HAZARDS**

Do not use or store near heat or open flame.

#### **DIRECTIONS FOR USE**

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

**READ ENTIRE LABEL AND PAMPHLET. USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS, AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.**

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

#### **AGRICULTURAL USE REQUIREMENTS**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: coveralls, chemical-resistant gloves, such as Barrier Laminate or Viton  $\geq$  14 mils, shoes plus socks, and protective eyewear.

### NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standards for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forest, nurseries, or greenhouses.

Keep all unprotected persons out of operating areas, or vicinity where there may be drift.  
Do not enter treated areas without protective clothing until sprays have dried.

### DISCLAIMER, RISKS OF USING THIS PRODUCT, LIMITED WARRANTY AND LIMITATION OF LIABILITY

**IMPORTANT:** Read the entire Label including this Disclaimer, Risks of Using this Product, Limited Warranty, and Limitation of Liability before using this product. If the terms are not acceptable THEN DO NOT USE THE PRODUCT; rather, return the unopened product within 15 days of purchase for a refund of the purchase price.

#### RISKS OF USING THIS PRODUCT

The Buyer and User (referred to collectively herein as "Buyer") of this product should be aware that there are inherent unintended risks associated with the use of this product which are impossible to eliminate. These risks include, but are not limited to, injury to plants and crops to which this product is applied, lack of control of the target pests or weeds, resistance of the target pest or weeds to this product, injury caused by drift, and injury to rotational crops caused by carryover in the soil. Such risks of crop injury, non-performance, resistance, or other unintended consequences are unavoidable and may result because of such factors as weather, soil conditions, disease, moisture conditions, irrigation practices, condition of the crop at the time of application, presence of other materials either applied in the tank mix with this product or prior to application of this product, cultural practices or the manner of use or application, (or a combination of such factors) all of which are factors beyond the control of J. Oliver Products, LLC. The Buyer should be aware that these inherent unintended risks may reduce the harvested yield of the crop in all or a portion of the treated acreage, or otherwise affect the crop such that additional care, treatment and expense are required to take the crop to harvest. If the Buyer chooses not to accept these risks, THEN THIS PRODUCT SHOULD NOT BE APPLIED. By applying this product Buyer acknowledges and accepts these inherent unintended risks AND TO THE FULLEST EXTENT ALLOWED BY LAW, AGREES THAT ALL SUCH RISKS ASSOCIATED WITH THE APPLICATION AND USE ARE ASSUMED BY THE BUYER.

J. Oliver Products, LLC shall not be responsible for losses or damages (including, but not limited to, loss of yield, increased expenses of farming the crop or such incidental, consequential or special damages that may be claimed) resulting from use of this product in any manner not set forth on the label. Buyer assumes all risks associated with the use of this product in any manner or under conditions not specifically directed or approved on the label.

#### LIMITED WARRANTY

J. Oliver Products, LLC warrants only that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the label, under average use conditions, when used strictly in accordance with the label and subject to the Risks of Using This Product as described above. To the extent consistent with applicable law AND AS SET FORTH ABOVE, J. OLIVER PRODUCTS, LLC MAKES NO OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED. No agent or representative of J. Oliver Products, LLC or Seller is authorized to make or create any other express or implied warranty.

#### LIMITATION OF LIABILITY

To the fullest extent allowed by law, J. Oliver Products, LLC or Seller is not liable for any incidental, consequential, indirect or special damages resulting from the use or handling of this product. The limitation includes, but is not limited to, loss of yield on all or any portion of the treated acreage, increased care, treatment or other expenses required to take the crop to harvest, increased finance charges or altered finance ratings, emotional or mental distress and/or exemplary damages. TO THE FULLEST EXTENT ALLOWED BY LAW, THE EXCLUSIVE REMEDY OF THE BUYER, AND THE EXCLUSIVE MAXIMUM LIABILITY OF J. OLIVER PRODUCTS, LLC OR SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT SHALL BE THE RETURN OF THE PURCHASE PRICE OF THIS PRODUCT OR, AT THE ELECTION OF J. OLIVER PRODUCTS, LLC OR SELLER, THE REPLACEMENT OF THE PRODUCT.



#### PROMPT NOTICE OF CLAIM

To the extent consistent with applicable law allowing such requirements J. Oliver Products, LLC must be provided notice as soon as Buyer has reason to believe it may have a claim, but in no event later than twenty-one days from date of planting, or twenty-one days from the date of application, whichever is latter, so that an immediate inspection of the affected property and growing crops can be made.

To the extent consistent with applicable law if Buyer does not notify J. Oliver Products, LLC of any claims in such period, it shall be barred from obtaining any remedy.

#### NO AMENDMENTS

J. Oliver Products, LLC and Seller offer this product, and Buyer accepts it, subject to the foregoing Disclaimer, Risks of Using This Product, Limited Warranty and Limitation of Liability, which may not be modified by any oral or written agreement.

#### TANK MIXES

**NOTICE: Tank mixing or use of this product with any other product which is not specifically and expressly authorized by the label shall be the exclusive risk of user, applicator and/or application advisor.**

Read and follow the entire label of each product to be used in the tank mix with this product.

**THE FOLLOWING STATEMENT ON CHEMIGATION WILL BE USED ONLY IF A SUPPLEMENTAL LABEL IS CREATED.**

#### CHEMIGATION

[Do not apply this product through any irrigation system unless the supplemental labeling on chemigation is followed. Refer to supplemental labeling entitled, "Application of CLETHODIM 2 EC Onions (dry bulbs and green) and Garlic by Chemigation", for use directions for chemigation.]

May be applied to onions and garlic by sprinkler irrigation systems. Do not apply by chemigation to any other crop, or to this crop using any other type of irrigation system.

#### USE INFORMATION

**FOR USE ON:** Alfalfa, Asparagus, Bean (dry) and Pea (shelled)<sup>1</sup>, Bean and Pea (succulent shelled)<sup>2</sup>, Broccoli, Cabbage, Canola\*, Carrot, Cauliflower (and other Head and Stem Brassica Vegetables)<sup>3</sup>, Celery, Clover (grown in Idaho, Oregon and Washington only), Conifers, Cotton, Cranberry, Cucumber, Eggplant (and other Fruiting Vegetables)<sup>4</sup>, Fallow Land (and other non-producing agricultural areas), Flax\*, Garden Beet, Garlic, Herbs<sup>5</sup>, Hops, Horseradish (and other Root Vegetables)<sup>6</sup>, Legume Vegetables (edible podded)<sup>7</sup>, Lettuce, Head and Leaf (and other leafy greens)<sup>8</sup>, Melons (including Cantaloupes and Watermelons)<sup>9</sup>, Mint, Mustard Greens (and other leafy brassica greens)<sup>10</sup>, Mustard Seed\*, Non-Bearing Food Crops, Non-Crop or Non-Planted Areas, Onions (dry bulb and green), Ornamentals, Peanut (including perennial), Peppers (bell and non-bell), Potato, Radish, Rhubarb (and other Leaf Petioles)<sup>11</sup>, Safflower, Sesame, Shallots (dry bulbs and green), Squash (including Pumpkins)<sup>9</sup>, Soybeans, Strawberry, Sugar Beet, Sunflower, Sweet Potato, Tomato and Yam (and other Tuberous and Corm Vegetables)<sup>12</sup>.

\*Not for use in California

<sup>1</sup> Other Bean (Dry) and Pea (Shelled) crops approved for use with CLETHODIM 2 EC include: Bean (*Lupinus* spp.), grain, sweet, white and white sweet; Bean (*Phaseolus* spp.), field, kidney, lima (dry), navy, pinto and tepary; Bean (*Vigna* spp.), adzuki bean, black-eyed pea, catjang, cowpea, crowder pea, moth bean, mung bean, rice bean, Southern pea, urd bean, broad (dry), chickpea (garbanzo), guar, lablab bean and lentil; Pea (*Pisum* spp.), field and pigeon

<sup>2</sup> Other Bean and Pea (Succulent Shelled) crops approved for use with CLETHODIM 2 EC includes: Bean (*Lupinus* spp.), grain, sweet, white and white sweet; Bean (*Phaseolus* spp.), field, kidney, lima (dry), navy, pinto and tepary; Bean (*Vigna* spp.), adzuki bean, black-eyed pea, catjang, cowpea, crowder pea, moth bean, mung bean, rice bean, Southern pea, urd bean, broad (dry), chickpea (garbanzo), guar, lablab bean and lentil; Pea (*Pisum* spp.), field and

- pigeon
- 3 Other head and stem brassica vegetables approved for use with CLETHODIM 2 EC include: Chinese broccoli, Brussels sprouts, Chinese (napa) cabbage, Chinese mustard, cavalo broccolo and kohlrabi.
  - 4 Other Fruiting Vegetables (except tomato) approved for use with CLETHODIM 2 EC include: eggplant, groundcherry, pepino, peppers (all) and tomatillo.
  - 5 Other Herb crops approved for use with CLETHODIM 2 EC include: angelica, balm, basil, borage, burnet, camomile, catnip, chervil (dried), chive, Chinese chive, clary, coriander (leaf), costmary, culantro (leaf), curry (leaf), dill (dillweed), horehound, hyssop, lavender, lovage (leaf), marigold, marjoram (*origanum* spp.), nasturtium, parsley (dried), pennyroyal, rosemary, rue, sage and savory, summer and winter.
  - 6 Other root vegetables approved for use with CLETHODIM 2 EC include: burdock, edible; celeriac; chervil, turnip-rooted; chicory; ginseng; parsley, turnip-rooted; parsnip; radish, oriental; rutabaga; salsify; salsify, black; salsify, Spanish; skirret and turnip.
  - 7 Other Edible Podded Legume Vegetable crops approved for use with CLETHODIM 2 EC include: Bean (*Phaseolus* spp.), runner, snap and wax; Bean (*Vigna* spp.), asparagus, Chinese longbean, moth, yardlong, jackbean; Pea (*Pisum* spp.), dwarf, edible-pod, snow, sugar snap, pigeon and sword bean.
  - 8 Other Leafy Greens crops approved for use with CLETHODIM 2 EC include: amaranth (Chinese spinach, leafy amaranth and tampala), arugula (roquette), chervil, chrysanthemum (edible-leaved and garland), com salad, cress (garden, yellow rock and winter), dandelion, dock (sorrel), endive (escarole), lettuce (head and leaf), orach, parsley, purslane (garden and winter), radicchio (red chicory), spinach (New Zealand and Vine (Indian and malabar).
  - 9 Other cucurbit crops approved for use with CLETHODIM 2 EC include: Chayote (fruit), Chinese Wax Gourd, Citron Melon, Edible Gourd, Gherkin and Muskmelons (all) including Honeydew Melon.
  - 10 Other leafy brassica greens approved for use with CLETHODIM 2 EC include: broccoli raab, Chinese (bok choy) cabbage, collards, kale, mizuna, mustard greens, mustard spinach, rape greens and turnip greens.
  - 11 Other leaf petiole crops approved for use with CLETHODIM 2 EC include: cardoon, celtuce, Chinese celery, Florence fennel, and Swiss chard.
  - 12 Other tuber and corm vegetables approved for use with CLETHODIM 2 EC include: arracacha, arrowroot, Chinese artichoke, Jerusalem artichoke, edible burdock, edible canna, bitter and sweet cassava, chayote (root), chufa, dasheen (taro), ginger, leren, tanier, turmeric and bean yam.

CLETHODIM 2 EC is not recommended for use on vegetable crops being grown for seed production unless specific use directions are provided.

CLETHODIM 2 EC is a selective postemergence herbicide for control of annual and perennial grasses.

CLETHODIM 2 EC does not control sedges or broadleaf weeds.

Repeated use of CLETHODIM 2 EC (or similar postemergence grass herbicides with the same mode of action) may lead to the selection of naturally occurring biotypes that are resistant to these products in some grass species.

If poor performance occurs and cannot be attributed to adverse weather or application conditions, a resistant biotype may be present. This is most likely to occur in fields where other control strategies such as crop rotation, mechanical removal, and other classes of herbicides are not used from year to year.

Do not allow CLETHODIM 2 EC to come in contact with desirable grass crops such as corn, rice, sorghum, small grains, or turf, as these and other grass crops will be injured or killed. Minor leaf spotting may occur on treated plants under certain environmental conditions. New foliage is not affected.

### **Control Symptoms**

Treated grass weeds show a reduction in vigor and growth. Early chlorosis/necrosis of younger plant tissue is followed by a progressive collapse of the remaining foliage. Symptoms will generally be observed in 7 to 14 days after application, depending on grass species treated and environmental conditions.

## APPLICATION INFORMATION

### Timing of Applications

Apply CLETHODIM 2 EC postemergence to actively growing grasses according to rate table recommendations. Applications made to grass plants stressed by insufficient moisture, or hot or cold temperatures, or to grass plants exceeding recommended growth stages may result in unsatisfactory control. Do not apply under these conditions.

In arid regions where irrigation is used to supplement limited rainfall, CLETHODIM 2 EC should be applied as soon as possible, after irrigation (within 7 days). In arid regions, a second application of CLETHODIM 2 EC will generally provide more effective control of perennial grass weeds than a single application. Make second application to actively growing grass 2 to 3 weeks after emergence of new growth.

Cultivation of treated grasses 7 days prior to or within 7 days after application of CLETHODIM 2 EC may reduce weed control. DO NOT APPLY CLETHODIM 2 EC if rainfall is expected within one hour, since control may be reduced.

### ADDITION OF ADJUVANT OR CROP OIL CONCENTRATE

CROP	ADJUVANT RECOMMENDATIONS
Alfalfa, Cotton, Bean (dry) & Pea (shelled), Edible Podded Legume Vegetables, Peanuts (including perennial), Potato, Soybean, Bean & Pea (succulent shelled), Sugar Beet and Sunflower	Always use a crop oil concentrate* at 1.0 qt./A by ground or 1 % v/v (but not less than 1 pt./A) in the finished spray volume by air.  1 to 2 qts./A of liquid fertilizer (10-34-0, 28%N or 32%N), or an equivalent amount (2.5 to 4.0 lbs./A) of spray grade ammonium sulfate (AMS) may be added to CLETHODIM 2 EC applications, in addition to the recommended rate of crop oil concentrate. The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
Asparagus, Canola, Carrot, Clover, Cranberry, Cucurbits, Flax, Fruiting Vegetables (except Tomato), Garden Beet, Garlic, Head & Stem Brassica Vegetables, Herbs, Hops, Leaf Petioles, Leafy Brassica Greens, Leafy Greens, Mint, Mustard Seed, Onion (Dry Bulb & Green), Root Vegetables, Safflower, Sesame, Shallots (Dry Bulb & Green), Strawberry, Sweet Potato (Yam & other Tuberous and Corm Vegetables except Potato) and Tomato	Always use a crop oil concentrate at 1% v/v in the finished spray volume unless tank mix instructions indicate otherwise.  Addition of liquid fertilizer is not recommended for these crops.
Non-Bearing Food Crops, Ornamental Plants,	Add a non-ionic surfactant containing at least 80% active ingredient at the rate of 1 pt. per 50 gals. (0.25% v/v). Use of crop oil concentrate is not recommended since it may injure flowers and foliage.
Conifer Trees, Fallow Land (and other non-producing agricultural areas), and Non-Crop or Non-planted Areas	Always use a crop oil concentrate containing at least 15% emulsifier at 1% v/v (but not less than 1 pt./A) in the finished spray volume.

\*Acceptable crop oil concentrates would be those that contain a minimum of 80% oils and 15% emulsifier. A crop oil concentrate must contain either a petroleum or vegetable oil base and must meet all the following criteria: be non phytotoxic, contain only EPA-exempt ingredients, provide good mixing quality, and be successful in local experience. Highly refined vegetable oils have proven more satisfactory than unrefined vegetable oils.

#### **Ground Application**

Use of sufficient spray volumes and pressure is essential to ensure complete coverage. Use a minimum of 5 gals. and a maximum of 40 gals. of spray solution per acre. Under the following conditions a minimum of 10 gals. per acre is required: ultra narrow row cotton, narrow row soybeans, broadleaf herbicide tank mixes, perennial grasses, volunteer corn, drought or stress conditions, heavy grass pressure or when grasses are at or near maximum height. Failure to use a minimum of 10 gals. per acre under these conditions can result in poor coverage and reduced grass control requiring repeat applications. Spray pressures should reflect a minimum of 30 psi and a maximum of 60 psi at the nozzle. Do not use flood nozzles.

Applications to onions (dry bulbs and green), garlic, and shallots (dry bulbs and green) should be made in a minimum of 20 gals. of spray solution per acre.

#### **Air Application**

Use a minimum of 3 gals. of spray solution per acre unless otherwise directed in this label. Increase spray volumes up to 10 gals. as grass or crop foliage becomes dense. For onions (dry bulbs and green), garlic, or shallots (dry bulbs and green): When applying by air do not exceed 8 fl. oz./A in a single application. In California, air applications to onions, garlic or shallots should be made in a minimum of 20 gals. of spray solution per acre. In states other than California, air application to onions, garlic, or shallots should be made in a minimum of 10 gals. of spray solution per acre.

**NOTE: Crop injury may occur when CLETHODIM 2 EC is applied to onions, garlic or shallots with aerial equipment.**

#### **Spot Treatment**

When using hand sprayers or high volume sprayers utilizing hand guns, mix 1/4% to 1/2% (0.33 oz. to 0.65 oz. per gal.) CLETHODIM 2 EC and treat to wet vegetation, while not allowing runoff of spray solution. For uses requiring crop oil concentrate, include crop oil concentrate at 1% (1.3 oz. per gal.) by volume. For uses requiring non-ionic surfactant, include non-ionic surfactant at 1/4% (0.33 oz. per gal.) by volume.

**NOTE: If CLETHODIM 2 EC is applied as a spot treatment, care should be taken to not exceed the maximum rate allowed on a "per acre" basis or crop injury may occur.**

#### **CHEMIGATION - ONION (Dry Bulb and Green) AND GARLIC SPRINKLER IRRIGATION APPLICATION**

**Do not apply CLETHODIM 2 EC by chemigation in the states of Idaho, Montana, Oregon and Washington.**

Apply CLETHODIM 2 EC at the high rate recommended for annual grasses (16 fl. oz. per acre) when the grass height is at the low end of the range (application to larger grasses may not provide adequate control). Add a crop oil concentrate containing at least 15% emulsifier at 1 quart per acre.

Apply CLETHODIM 2 EC in 0.1 to 0.2 acre-inch of water either at the end of a regular irrigation set or as a separate application not associated with a regular irrigation using the least amount of water that provides proper distribution and coverage. Application of more than label recommended quantities of irrigation water per acre may result in decreased product performance by removing the chemical from the zone of effectiveness. Use a metering device to inject the CLETHODIM 2 EC into the irrigation water at a constant flow. Constant agitation must be maintained in the chemical supply tank during the entire period of herbicide application. Inject the product with a positive displacement pump into the main line ahead of a right angle turn to ensure adequate mixing. Allow time for all lines to flush the herbicide through all nozzles before

turning off irrigation water. To ensure the lines are flushed and free of remaining herbicide, a dye indicator may be injected into the lines to mark the end of the application period.

It is not recommended that CLETHODIM 2 EC be applied through an irrigation system connected to a public water system. Public water system means a system for the provision to the public of piped water for human consumption, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

#### **Use Precautions**

1. Apply this product only through sprinkler irrigation systems including center pivot, lateral move, end tow, side (wheel) roll, travelers, big gun, solid set, or hand move. Do not apply this product through any other type of irrigation system.
2. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop may result from non-uniform distribution of treated water.
3. If you have any questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
4. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the label-prescribed safety devices for public water supplies are in place.
5. A person knowledgeable of the chemigation system and responsible for its operation or under supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.
6. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
7. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
8. The pesticide injection pipeline must also contain a functional, normally closed solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
9. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
10. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
11. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
12. Do not apply when wind speed favors drift beyond the area intended for treatment.

## RESTRICTIONS AND LIMITATIONS

- Do not apply if rain is expected within 1 hour of application as control may be unsatisfactory.
- Do not apply a postemergence broadleaf herbicide within one day following application of CLETHODIM 2 EC or reduced grass control may result.
- CLETHODIM 2 EC is not recommended for use on vegetable crops being grown for seed production unless specific use directions are provided.
- For canola, do not apply more than 6 fl. oz. of CLETHODIM 2 EC per acre per season. For clover, flax, mustard seed and radish crops, do not apply more than 16 fl. oz. of CLETHODIM 2 EC (0.25 lb. ai) per acre per season. For all other crops, do not apply more than 32 fl. oz. of CLETHODIM 2 EC (0.50 lb. ai) per acre per season. Application on Long Island, New York, is restricted to no more than 16 fl. oz. of CLETHODIM 2 EC (0.25 lb. ai) per acre per season.
- Do not apply more than 8 fl. oz./A of CLETHODIM 2 EC **per application** to the following crops: asparagus, brassica vegetables (head and stem), bean (succulent shelled), carrot, cranberry, cucurbits, flax, fruiting vegetables (except tomato), garden beet, green onion, herbs, hops, leaf petioles, leafy brassica greens, leafy greens, legume vegetables (edible podded), non-bearing food crops, pea (shelled), pea (succulent shelled), root vegetables, safflower, sesame and strawberry. Do not apply more than 6 fl. oz./A of CLETHODIM 2 EC per application to canola or mustard seed. For all other crops, do not apply more than 16 fl. oz. of CLETHODIM 2 EC (0.25 lb. ai) per acre per application. **Exceeding these recommendations may result in unacceptable crop injury.**
- Do not apply under conditions of stress. Applying CLETHODIM 2 EC under conditions that do not promote active grass growth will reduce herbicide effectiveness. These conditions include drought, excessive water, extremes in temperature, low humidity and grasses either partially controlled or stunted from prior pesticide applications. Grasses under these kinds of stressful conditions will not absorb and translocate CLETHODIM 2 EC effectively, and will be less susceptible to herbicide activity.
- Optimal perennial grass control can be obtained if rhizomes or stolons are cut up by preplant tillage practices, (discing, plowing, etc.) to stimulate maximum emergence of grass shoots. Cultural practices, such as continuous no-tillage in which the perennial grass rhizomes or stolons are not cut up, result in a very staggered, non-uniform weed emergence. Due to this non-uniform weed emergence, no fewer than 2 CLETHODIM 2 EC applications per season per year are recommended at the appropriate weed-growth stage rate under continuous no-till conditions.
- Grass crops such as corn, rice, sorghum, small grains, or turf, etc. are highly sensitive to CLETHODIM 2 EC.
- While all the vegetable crops on this label have been tested and are tolerant to CLETHODIM 2 EC, not all specialty varieties of these crops have been tested. It is advised that, before applying CLETHODIM 2 EC to specialty varieties of vegetable crops on this label, crop tolerance be investigated first using a small section of the field. It is possible that injury symptoms can occur. Symptoms may appear as leaf speckling or stunting.
- Always read and follow the restrictions and limitations for all products whether used alone or in a tank mix. The most restrictive labeling of any product used applies in tank mixtures, including all crop rotational and other crop restrictions.
- Tank mixes of CLETHODIM 2 EC and broadleaf herbicides may result in reduced grass control. If grass regrowth occurs, an additional application of CLETHODIM 2 EC may be necessary. **AVOID SPRAY DRIFT.**

- Do not allow spray from ground or aerial equipment to drift onto adjacent land or crops. When drift may be a problem, do everything possible to reduce spray drift, including:
  1. Do not spray if wind speeds are or become excessive.
  2. Do not spray if wind speed is 10 mph or greater. If sensitive crops or plants are downwind, extreme caution must be used under all conditions.
  3. Do not spray if winds are gusty.
  4. Use extreme caution when conditions are favorable for drift (high temperatures, drought, low relative humidity), especially when sensitive plants are located nearby.
  5. Do not apply when a temperature inversion exists. If inversion conditions are suspected, consult with local weather services before making an application.
  6. Further reductions in drift can be obtained by:
    - a) Using large droplet size sprays. Do not use nozzles that produce small droplets. Orient nozzles downward and slightly backward as needed to reduce drift for ground applications.
    - b) Orienting nozzles straight back with the windstream, using straight stream orifices for aerial applications. Use the lowest number of nozzles practical with the largest possible orifice size to obtain the minimum 3 GPA volume. Application height and boom length should be set according to manufacturer's instructions to minimize drift.
    - c) Increasing the volume of spray mixture (for example, a minimum of 10 GPA for ground applications) by using higher flow rate nozzles. Using lower pressure with the appropriate nozzle to obtain higher volumes will also reduce drift.
    - d) Applying as close to target plants as practical while maintaining a good spray pattern for adequate coverage.

**Do not apply under conditions involving possible drift to food, forage or other plantings that might be damaged or the crops thereof rendered unfit for sale, use or consumption.**

**CROP SPECIFIC RESTRICTIONS AND LIMITATIONS FOR CLETHODIM 2 EC**

Crops <sup>(1)</sup>	Minimum Time From Application to Harvest (PHI)	Use Rates Per Acre	Crop Oil Concentrate Rates Per Acre <sup>(2)</sup>	Special Use Instructions
Alfalfa including: Sainfoin Holy Clover Birdsfoot trefoil <sup>(3)</sup>	15 days before grazing, feeding or harvesting (cutting) for forage or hay	6-16 fl. oz. <sup>(4)</sup>	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air <sup>(5)</sup>	Refer to tank mix partners for feeding, grazing and harvesting restrictions. <sup>(5,6)</sup>  The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.

**CROP SPECIFIC RESTRICTIONS AND LIMITATIONS FOR CLETHODIM 2 EC**

<b>Crops<sup>(1)</sup></b>	<b>Minimum Time From Application to Harvest (PHI)</b>	<b>Use Rates Per Acre</b>	<b>Crop Oil Concentrate Rates Per Acre<sup>(2)</sup></b>	<b>Special Use Instructions</b>
<b>Asparagus</b>	1 day	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Bean, Dry including:</b> Bean ( <i>Lupinus</i> spp.) Grain Sweet White White Sweet Bean ( <i>Phaseolus</i> spp.) Field Kidney Lima (dry) Navy Pinto Tepary Bean ( <i>Vigna</i> spp.) Adzuki Bean Black-eyed Pea Catjang Cowpea Crowder Pea Moth Bean Mung Bean Rice Bean Southern Pea Urd Bean Broad (dry) Chickpea (garbanzo) Guar Lablab Bean Lentil	30 days	6-16 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	Do not apply more than 16 fl. oz./A per application.  For repeat applications make on a minimum of a 14 day interval.  Refer to appropriate Table for reduced rate recommendations for the control of small annual grasses.  The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals and volunteer corn.
<b>Bean, Succulent Shelled</b> including: Bean ( <i>Phaseolus</i> spp.) Broad Bean (succulent) Lima Bean (green) Bean ( <i>Vigna</i> spp.) Black-eyed Pea Cowpea Southern Pea	21 days	6-8 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	Refer to appropriate Table for reduced rate recommendations for the control of small annual grasses.  Do not apply more than one (1) application per acre per season.  The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals and volunteer corn.
<b>Beet, Garden</b>	30 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.



# CROP SPECIFIC RESTRICTIONS AND LIMITATIONS FOR CLETHODIM 2 EC

Crops <sup>(1)</sup>	Minimum Time From Application to Harvest (PHI)	Use Rates Per Acre	Crop Oil Concentrate Rates Per Acre <sup>(2)</sup>	Special Use Instructions
<b>Brassica Vegetables, Head &amp; Stem</b> including: Broccoli Brussels sprouts Cabbage Cauliflower	30 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application. For repeat applications make on a minimum of a 14 day interval.
<b>Canola</b>	70 days	4-6 fl. oz.	1% v/v in the finished spray volume.	Do not apply after crop has begun bolting. Crop injury may occur when CLETHODIM 2 EC is applied during the bloom period. Do not apply more than 6 oz./A in a single application. Do not exceed 6 fl. oz./A in a season.
<b>Carrot</b>	30 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application. For repeat applications make on a minimum of a 14 day interval.
<b>Clover</b>	15 days before grazing, feeding, or harvesting (cutting) for forage or hay	6-16 fl. oz.	1% v/v in the finished spray volume.	For use on clover grown in the states of Idaho, Oregon and Washington only. Do not exceed 16 fl. oz./A in a season.
<b>Cotton</b>	60 days	6-16 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	Do not graze treated fields or feed treated forage or hay to livestock. The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
<b>Cranberry</b>	30 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application. Do not apply between the "hook" stage and full fruit set. For repeat applications make on a minimum of a 14 day interval.
<b>Cucurbits</b> including: Chayote (fruit) Chinese Wax Gourd Citron Melon Cucumber Gherkin Gourd, Edible Muskmelons (all) including: Cantaloupes Honeydew Melon Pumpkin Squash (all) Watermelon	14 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application. For repeat applications make on a minimum of a 14 day interval.

**CROP SPECIFIC RESTRICTIONS AND LIMITATIONS FOR CLETHODIM 2 EC**

<b>Crops<sup>(1)</sup></b>	<b>Minimum Time From Application to Harvest (PHI)</b>	<b>Use Rates Per Acre</b>	<b>Crop Oil Concentrate Rates Per Acre<sup>(2)</sup></b>	<b>Special Use Instructions</b>
<b>Fallow Land</b> <b>Conifer Trees</b> (and other non-producing agricultural areas) <b>Non-Crop or Non-Planted Areas</b>	N/A	6-16 fl. oz.	1% v/v (but not less than 1 pt./A) in the finished spray volume using a crop oil concentrate containing at least 15% emulsifier.	Do not plant any crop for 30 days after application unless clethodim is registered for use in that crop.
<b>Flax</b>	60 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Apply prior to bloom. Crop injury may occur when CLETHODIM 2 EC is applied during the bloom period.  Do not apply more than 8 fl. oz./A in a single application.  Do not exceed 16 fl. oz./A in a season.
<b>Fruiting Vegetable</b> (except Tomato) including: Eggplant Groundcherry Pepino Peppers (all) Tomatillo	20 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Herbs including:</b> Angelica Balm Basil Borage Burnet Camomile Catnip Chervil (dried) Chive Chive, Chinese Clary Coriander (leaf) Costmary Culantro (leaf) Curry (leaf) Dill (dillweed) Horehound Hyssop Lavender Lovage (leaf) Marigold Marjoram ( <i>Origanum</i> spp.) Nasturtium Parsley (dried) Pennyroyal Rosemary Rue Sage Savory, Summer and Winter	14 days	6-8 fl. oz.	1% v/v in the finished spray volume.	CLETHODIM 2 EC has not been tested on all herbs, and herb varieties. It is the responsibility of the user to test CLETHODIM 2 EC on a small portion of the crop to be treated before treating the entire field.  Crop tolerance should be verified to CLETHODIM 2 EC on a small area of the herb crop, at the desired CLETHODIM 2 EC rate and with the same crop oil concentrate that will be used on the herb field. If no crop response is evident seven (7) days after treatment, CLETHODIM 2 EC may be used on the entire field at the rate tested and with the same crop oil used in the tolerance test.  Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.

**CROP SPECIFIC RESTRICTIONS AND LIMITATIONS FOR CLETHODIM 2 EC**

<b>Crops<sup>(1)</sup></b>	<b>Minimum Time From Application to Harvest (PHI)</b>	<b>Use Rates Per Acre</b>	<b>Crop Oil Concentrate Rates Per Acre<sup>(2)</sup></b>	<b>Special Use Instructions</b>
<b>Hops</b>	21 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.

**CROP SPECIFIC RESTRICTIONS AND LIMITATIONS FOR CLETHODIM 2 EC**

<b>Crops<sup>(1)</sup></b>	<b>Minimum Time From Application to Harvest (PHI)</b>	<b>Use Rates Per Acre</b>	<b>Crop Oil Concentrate Rates Per Acre<sup>(2)</sup></b>	<b>Special Use Instructions</b>
<b>Leaf Petioles</b> including: Cardoon Celery Celtuce Chinese Celery Fennel, Florence (finocchio) Rhubarb Swiss Chard	30 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Leafy Brassica Greens</b> including: Broccoli Raab Cabbage, Chinese (bok choy) Collards Kale Mizuna Mustard Greens Mustard Spinach Rape Greens Turnip Greens	14 days	6-8 fl. oz.	1 % v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Leafy Greens</b> including: Amaranth Chinese Spinach Leafy Amaranth Tampala Arugula (roquette) Chervil Chrysanthemum, Edible-leaved Chrysanthemum, Garland Corn Salad Cress Garden Upland (yellow rock and winter) Dandelion Dock (sorrel) Endive (escarole) Lettuce, Head and Leaf Orach Parsley Purslane Garden Winter Radicchio (red chicory) Spinach New Zealand Vine (Indian and malabar)	14 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.

**CROP SPECIFIC RESTRICTIONS AND LIMITATIONS FOR CLETHODIM 2 EC**

<b>Crops<sup>(1)</sup></b>	<b>Minimum Time From Application to Harvest (PHI)</b>	<b>Use Rates Per Acre</b>	<b>Crop Oil Concentrate Rates Per Acre<sup>(2)</sup></b>	<b>Special Use Instructions</b>
<b>Legume Vegetables, Edible Podded</b> including: Bean ( <i>Phaseolus</i> spp.) Runner Snap Wax Bean ( <i>Vigna</i> spp.) Asparagus Chinese Longbean Moth Yardlong Jackbean Pea ( <i>Pisum</i> spp.) Dwarf Edible-pod Snow Sugar Snap Pigeon Sword Bean	21 days	6-8 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	Do not apply more than 8 fl. oz./A in a single application.  Do not apply more than one (1) application per acre per season.  For peas apply before bloom, but no later than 21 days before harvest.  Refer to appropriate Table for reduced rate recommendations for the control of small annual grasses.  The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
<b>Mint</b>	21 days	6-16 fl. oz. <sup>(4)</sup>	1 qt. by ground or 1% v/v (but not less than 1 pt./A by air.)	Do not apply more than 16 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Mustard Seed</b>	75 days	4-6 fl. oz.	1% v/v in the finished spray volume.	Do not apply after crop has begun bolting. Crop injury may occur when CLETHODIM 2 EC is applied during the bloom period.  Do not apply more than 6 fl. oz./A in a single application.  Do not exceed 16 fl. oz./A in a season.
<b>Onion</b> (Dry Bulb Only) <b>Garlic</b> <b>Shallot</b> (Dry Bulb Only)	45 days	6-16 fl. oz. <sup>(7), (8)</sup>	1% v/v in the finished spray volume.	Minimum of 20 gals./A spray volume by ground in entire U.S.  Minimum of 20 gals./A spray volume by air in California. <sup>(9)</sup>  In states other than California, air applications to onions, garlic or shallots should be made in a minimum of 10 gals./A.
<b>Onion, Green</b> including: Green Eschalot Green Shallot Japanese Bunching Onion Leeks Scallion or Spring Onion	14 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.

**CROP SPECIFIC RESTRICTIONS AND LIMITATIONS FOR CLETHODIM 2 EC**

<b>Crops<sup>(1)</sup></b>	<b>Minimum Time From Application to Harvest (PHI)</b>	<b>Use Rates Per Acre</b>	<b>Crop Oil Concentrate Rates Per Acre<sup>(2)</sup></b>	<b>Special Use Instructions</b>
<b>Ornamentals</b>	N/A	6-16 fl. oz.	Use of crop oil concentrate is not recommended since it may injure flowers and foliage. See Special Use Instructions.	Add a non-ionic surfactant containing at least 80% active ingredient at the rate of 1 pt. per 50 gals. (0.25% v/v).
<b>Non-Bearing Food Crops</b>	N/A	6-8 fl. oz. <sup>(8)</sup>		Sugar maples cannot be tapped for syrup within one year of CLETHODIM 2 EC application.  Do not apply more than 8 fl. oz./A in a single application to non-bearing food crops.
<b>Pea, Shelled including:</b> Pea ( <i>Pisum</i> spp.) Field Pigeon	30 days	6-8 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	Do not apply more than 8 fl. oz./A per application.  Do not apply more than one (1) application per acre per season.  Apply before bloom but not later than 30 days prior to harvest. <sup>(10)</sup>  Refer to appropriate Table for reduced rate recommendations for the control of small annual grasses.  The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals and volunteer corn.
<b>Pea, Succulent Shelled including:</b> Pea ( <i>Pisum</i> spp.) English Pea Garden Pea Green Pea Pigeon Pea	21 days	6-8 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	Do not apply more than 8 fl. oz./A per application.  Do not apply more than one (1) application per acre per season.  Apply before bloom but not later than 21 days prior to harvest. <sup>(10)</sup>  Refer to appropriate Table for reduced rate recommendations for the control of small annual grasses.  The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals and volunteer corn.
<b>Peanut (Including Perennial)</b>	40 days	6-16 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.

**CROP SPECIFIC RESTRICTIONS AND LIMITATIONS FOR CLETHODIM 2 EC**

<b>Crops<sup>(1)</sup></b>	<b>Minimum Time From Application to Harvest (PHI)</b>	<b>Use Rates Per Acre</b>	<b>Crop Oil Concentrate Rates Per Acre<sup>(2)</sup></b>	<b>Special Use Instructions</b>
<b>Potato</b>	30 days	6-16 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
<b>Radish</b>	15 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  Do not apply more than 16 fl. oz./A (0.25 lb. ai) per acre in a season.  For repeat applications make on a minimum of a 14 day interval.
<b>Root Vegetables</b> (except Radish), including: Chicory Ginseng Horseradish Turnip	30 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Safflower</b>	70 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Sesame</b>	14 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply during flowering.  Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Soybean</b>	60 days	6-16 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	Do not graze treated fields or feed treated forage or hay to livestock.  Refer to appropriate Table for reduced rate recommendations for the control of small annual grasses.  The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
<b>Strawberry</b>	4 days	6-8 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 8 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.

# CROP SPECIFIC RESTRICTIONS AND LIMITATIONS FOR CLETHODIM 2 EC

Crops <sup>(1)</sup>	Minimum Time From Application to Harvest (PHI)	Use Rates Per Acre	Crop Oil Concentrate Rates Per Acre <sup>(2)</sup>	Special Use Instructions
Sugar Beet	40 days	6-16 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	Refer to appropriate Table for reduced rate recommendations for the control of small annual grasses.  The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
Sunflower	70 days	6-16 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air. <sup>(5)</sup>	The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
Sweet Potato, Yam and other Tuberous and Corm Vegetables (except Potato) including: Artichoke Chinese Jerusalem Cassava Bitter Sweet Ginger	30 days	6-16 fl. oz.	1% v/v in the finished spray volume.	The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome, Johnsongrass, red rice, wild oats, volunteer cereals and volunteer corn.
Tomato	20 days	6-16 fl. oz.	1% v/v in the finished spray volume.	For repeat applications make on a minimum of a 14 day interval.

N/A = Not Applicable

- 1 CLETHODIM 2 EC is not recommended for use on vegetable crops being grown for seed production unless specific use directions are provided.
- 2 Acceptable crop oil concentrates would be those which contain a minimum of 80% oils and 15% emulsifier. A crop oil concentrate must contain either a petroleum or vegetable oil base and must meet all the following criteria: be non phytotoxic, contain only EPA-exempt ingredients, provide good mixing quality and be successful in local experience. Highly refined vegetable oils have proven more satisfactory than unrefined vegetable oils. See the Addition of Adjuvant and Crop Oil Concentrate section for further information.
- 3 CLETHODIM 2 EC may be applied to seedling or established alfalfa grown for seed, hay, silage, green chop or direct grazing.
- 4 For weed control in established alfalfa and mint, the minimum use rate is 10 fl. oz./A.
- 5 1 to 2 qts./A of liquid fertilizer (10-34-0, 28%N or 32%N), or an equivalent amount (2.5 to 4.0 lbs./A) of spray grade ammonium sulfate (AMS) may be added to CLETHODIM 2 EC applications, in addition to the recommended rate of crop oil concentrate.
- 6 Do not apply CLETHODIM 2 EC plus 2,4-DB as a tank mix to alfalfa unless the 60 day feeding, grazing, and harvesting restriction on the 2,4-DB label can be observed.
- 7 For ground applications to garlic or shallot, do not exceed 8 fl. oz./A in a single application. For air applications to onion, garlic or shallot, do not exceed 8 fl. oz./A in a single application. For garlic and shallot, do not exceed 2 applications per season. In CA for air applications to onion, do not exceed 2 applications per season.



8 If CLETHODIM 2 EC is applied as a spot treatment to onion, garlic, shallot, or non-bearing food crops, care should be taken to not exceed the maximum rate allowed on a "per acre" basis or crop injury may occur.

9 In California, do not apply CLETHODIM 2 EC to onion, garlic, or shallot until the crop has at least two full leaves. In California, 14 day spray intervals are recommended between the application of CLETHODIM 2 EC and liquid nitrogen or other herbicide applications. Injury to crop may occur when shorter intervals are observed.

10 Applications of CLETHODIM 2 EC to peas during the bloom period could result in severe crop injury, including loss of yield and delayed maturity.

#### IMPORTANT

Plant tolerance to CLETHODIM 2 EC at labeled rates has been found to be acceptable for the indicated genera and species listed below. Due to variability within species, crop growth stage, environmental conditions, and application techniques, it is recommended that the user determine if the herbicide can be used safely on a few plants prior to widespread application. Neither the seller nor the manufacturer of CLETHODIM 2 EC have investigated the safety factor to plants not listed on the label.

### NON-BEARING FOOD CROPS

**CLETHODIM 2 EC SHOULD NOT BE APPLIED TO NON-BEARING FRUIT OR NUT CROPS WHICH ARE GROWN FOR ROOT STOCK.**

**Crop injury to non-bearing fruit and nut crops can occur if CLETHODIM 2 EC is improperly applied. CLETHODIM 2 EC should not be applied directly over the top of these plant types. Instead, spray should be directed at the base of the plant where grassy weeds are growing near the ground.**

Non-bearing fruit and nut crops are plants which will not bear fruit or nuts for at least one year following CLETHODIM 2 EC application.

COMMON NAME	SCIENTIFIC NAME
Apples	<i>Malus</i> spp.
Berries	<i>Vaccinium</i> spp.
	<i>Rubus</i> spp.
Cherry, Sweet	<i>Prunus avium</i>
Citrus Fruits	<i>Citrus</i> spp.
Grapes	<i>Vitis</i> spp.
Olives	<i>Olea</i> spp.
Peach	<i>Prunus persica</i>
Pears	<i>Pyrus communis</i>
Prunes	<i>Prunus</i> spp.
Stone Fruits	<i>Prunus</i> spp.
Strawberries	<i>Fragaria</i> spp.
Tree Nuts	
Almond	<i>Prunus triloba</i>
Filbert	<i>Corylus maxima</i>
Pecan	<i>Carya illinoensis</i>
Pistachio	<i>Pistacia vera</i>
Walnut	<i>Juglans</i> spp.

## CONIFER TREES

CLETHODIM 2 EC can be used to control labeled grasses in Christmas tree farms, conifer nurseries, and conifer plantations (but not in forests).

COMMON NAME	SCIENTIFIC NAME
Arborvitae, American	<i>Thuja occidentalis</i>
Cedars	<i>Cedrus</i> spp.
Cypress	<i>Taxodium</i> spp.
Fir, Douglas	<i>Pseudotsuga menziesii</i>
Firs	<i>Abies</i> spp.
Hemlock, Canadian/Eastern	<i>Tsuga canadensis</i>
Hemlock, Western	<i>Tsuga heterophylla</i>
Pines	<i>Pinus</i> spp.
Spruces	<i>Picea</i> spp.
Yew	<i>Taxus</i> spp.

## NON-CROP OR NON-PLANTED AREAS

The following areas are considered non-crop or non-planted areas: rights-of-way including railroads, highways, roads, dividers, medians, pipelines, public utility lines, pumping stations, transformer stations and substations. Around airports, electric utilities, commercial buildings, manufacturing plants, storage yards, rail yards, fence lines, parkways, and post-harvest croplands. Also beneath greenhouse benches and around golf courses.

**RECOMMENDATIONS FOR ANNUAL GRASSES  
(EXCEPT FOR IN ESTABLISHED ALFALFA AND MINT)**

GRASS SPECIES	SCIENTIFIC NAME	WEED HEIGHT* (Inches)	RATE FL. OZ./ ACRE	HIGH RATE <sup>(1)</sup>
Barnyardgrass	<i>Echinochloa crus-galli</i>	2 to 8	6	8
Broadleaf Signalgrass	<i>Brachiaria platyphylla</i>	2 to 6	6	8
Brome				
California	<i>Bromus carinatus</i>	2 to 6	6	8
Cheat	<i>Bromus secalinus</i>	2 to 6	6	8
Downy	<i>Bromus tectorum</i>	2 to 6	6	8
Ripgut	<i>Bromus diandrus</i>	2 to 6	6	8
Canarygrass	<i>Phalaris canariensis</i>	1 to 4	6	8
Crabgrass				
Hairy	<i>Digitaria adscendens</i>	2 to 6**	6	8
Large	<i>Digitaria sanguinalis</i>	2 to 6**	6	8
Smooth	<i>Digitaria ischaemum</i>	2 to 6**	6	8
Southern	<i>Digitaria ciliaris</i>	2 to 6**	6	8
Crowfootgrass	<i>Dactyloctenium aegyptium</i>	2 to 6**	6	8
Fall Panicum	<i>Panicum dichotomiflorum</i>	2 to 8	6	8
Field Sandbur	<i>Cenchrus incertus</i>	2 to 6	6	8
Foxtail				
Giant	<i>Setaria faberi</i>	2 to 12	6	8
Green	<i>Setaria viridis</i>	2 to 8	6	8
Yellow	<i>Setaria glauc</i>	2 to 8	6	8
Goosegrass	<i>Eleusine indica</i>	2 to 6**	6	8
Itchgrass	<i>Rottboellia cochinchinensis</i>	2 to 6	6	8
Junglerice	<i>Echinochloa colona</i>	2 to 6	6	8
Lovegrass (Stinkgrass)	<i>Eragrostis cilianensis</i>	2 to 6	6	8
Rabbitsfootgrass	<i>Polypogon monspeliensis</i>	1 to 4	6	8
Red Rice	<i>Oryza sativa</i>	1 to 3	6	8
Ryegrass				
Hardy	<i>Lolium remotum</i>	2 to 6	6	8
Italian	<i>Lolium multiflorum</i>	2 to 6	6	8
Seedling Johnsongrass	<i>Sorghum halepense</i>	4 to 10	6	8
Shattercane	<i>Sorghum bicolor</i>	6 to 18	6	8
Southwestern Cupgrass	<i>Eriochloa gracilis</i>	2 to 6	6	8

continued

**RECOMMENDATIONS FOR ANNUAL GRASSES  
(EXCEPT FOR IN ESTABLISHED ALFALFA AND MINT) (continued)**

GRASS SPECIES	SCIENTIFIC NAME	WEED HEIGHT (Inches)*	RATE FL. OZ./ ACRE	HIGH RATE <sup>(1)</sup>
Sprangle top				
Amazon	<i>Leptochloa panicoides</i>	2 to 6	6	8
Bearded	<i>Leptochloa fascicularis</i>	2 to 6	6	8
Mexican	<i>Leptochloa uninervia</i>	2 to 6	6	8
Red	<i>Leptochloa filiformis</i>	2 to 6	6	8
Texas Panicum	<i>Panicum texanum</i>	2 to 6	6	8
Volunteer Cereals <sup>(2)</sup>				
Barley	<i>Hordeum vulgare</i>	2 to 6	6	8
Oats	<i>Avena sativa</i>	2 to 6	6	8
Rye	<i>Secale cereale</i>	2 to 6	6	8
Wheat	<i>Triticum aestivum</i>	2 to 6	6	8
Volunteer Corn <sup>(3)</sup>	<i>Zea mays</i>	4 to 12	4	6
Volunteer Corn <sup>(3)</sup>	<i>Zea mays</i>	12 to 24	6	8
Volunteer Corn (S.R.) <sup>(4)</sup>	<i>Zea mays</i>	4 to 12	8 (suppression only)	
Volunteer Grain Sorghum	<i>Sorghum bicolor</i>	8 to 12	6	8
Wild Oats	<i>Avena fatua</i>	2 to 6	6	8
Wild Proso Millet	<i>Panicum miliaceum</i>	2 to 10	6	8
Witchgrass	<i>Panicum capillare</i>	2 to 8	6	8
Woolly Cupgrass	<i>Eriochloa villosa</i>	2 to 8	6	8

- Apply only to actively growing grasses at recommended weed heights.
- Apply when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.
- Use the high rate under heavy grass pressure and/or when grasses are at maximum height.
- Do not apply more than 8 fl. oz./A of CLETHODIM 2 EC per application to the following crops: asparagus, carrot, cranberry, cucurbits, flax, fruiting vegetables (except tomato), garden beets, green onion, head and stem brassica vegetables, herbs, hops, leaf petioles, leafy brassica greens, leafy greens, non-bearing food crops, root vegetables, safflower, sesame and strawberry. Do not apply more than 6 fl. oz./A of CLETHODIM 2 EC per application to canola or mustard seed.

\* Generally occurs between 3-leaf stage and tillering.

\*\* Length of lateral growth.

(1) Rates higher than 8 fl. oz./A may be applied in certain geographic areas, cropping situations, or environmental conditions, where experience has shown that higher rates are needed for satisfactory control of annual grasses. In these situations, rates from 8 to 16 fl. oz./A may be applied. Do not apply more than 8 fl. oz./A of CLETHODIM 2 EC per application to the following crops: asparagus, carrot, cranberry, cucurbits, flax, fruiting vegetables (except tomato), garden beet, green onion, head and stem brassica vegetables, herbs, hops, leaf petioles, leafy brassica greens, leafy greens, non-bearing food crops, root vegetables, safflower, sesame and strawberry. Do not apply more than 6 fl. oz./A of CLETHODIM 2 EC per application to canola or mustard seed.

(2) When a cereal grain crop (such as wheat) is interseeded for crop establishment or is planted as wind breaks aid crop establishment, the minimum CLETHODIM 2 EC use rate for control is 8 fl. oz./A.

(3) Includes Roundup Ready®, Liberty Link® and IMI-CORN® volunteer corn.

(4) Sethoxydim resistant volunteer corn.

**RECOMMENDATIONS FOR ANNUAL & PERENNIAL GRASS CONTROL  
IN ESTABLISHED ALFALFA AND MINT WITH CLETHODIM 2 EC**

<b>GRASS SPECIES</b>	<b>WEED STAGE</b>	<b>RATE FL. OZ./ ACRE</b>	<b>HIGH RATE</b>
Annual & Perennial Grasses Listed in Grass Table	See Table	10	16

**Mowing:** The best control of annual grasses can be achieved by applying CLETHODIM 2 EC before grass weeds are mowed. Once a grass is mowed it becomes tougher to control, as much of the available leaf surface has been removed. In areas without a killing frost, some annuals can over-winter after having been mowed multiple times. These grasses form large crowns and may contain many viable buds. These grasses, even though they may be an annual grass, may require repeated applications of CLETHODIM 2 EC for partial or complete control.

**Irrigated Alfalfa and Mint:** Irrigation practices can be very critical to the successful use of CLETHODIM 2 EC in established alfalfa and mint and may be necessary to initiate active growth of the weeds prior to application. Generally applications 2 to 4 days after an irrigation are most effective. Irrigation made shortly after application (2 days) can be effective, but more consistent grass control occurs when the irrigation is made before the application.

**Aerial Application:** Apply CLETHODIM 2 EC in a minimum of 10 GPA in established alfalfa and mint when applying by air.

**Annual Grass Control:** Apply CLETHODIM 2 EC at the grass sizes indicated in the Recommendation for Annual Grass Table and rates indicated. If a grass has been cut, apply CLETHODIM 2 EC after active growth has resumed and regrowth has reached the minimum height and before it reaches the maximum height indicated. Apply before the alfalfa/mint canopy covers the grasses and interferes with the spray coverage. Some annual grasses are spring- and summer-germinating plants, while others are fall-germinating plants, and the time they are actively growing and most susceptible to CLETHODIM 2 EC may vary from region to region. Also some annuals germinate over an extended period of time, and because control of small grasses is desired, applications after each weed flush may be required. As a general rule spray spring and summer-germinating grasses as early in the season as possible, after initial green-up. Spray fall-germinating weeds in the fall soon after they begin growing but before any damage is done due to frost. Late fall applications may be less effective due to environmental conditions, such as frost, slower plant growth, or the onset of flowering.

**Perennial Grass Control:** CLETHODIM 2 EC effectively controls perennial grasses such as bermudagrass, Johnsongrass, quackgrass, wirestem muhly, tall fescue, foxtail barley and orchardgrass. Due in part to lack of tillage, perennial grasses are more difficult to control in a perennial crop such as established alfalfa or mint. A program of repeated applications is usually necessary for best results. The best way to control perennial grasses is to do so in the year of stand establishment before rhizomes and stolons become large and difficult to kill.

Use the high rate under heavy grass pressure and/or when grasses are at or near maximum height.

Always add a crop oil concentrate at 1 qt./A by ground or 1% v/v (but not less than 1 pt./A) to the finished spray volume by air.

**RECOMMENDATIONS FOR ANNUAL BLUEGRASS CONTROL  
WITH CLETHODIM 2 EC**

GRASS SPECIES	WEED STAGE	RATE FL. OZ./ ACRE	HIGH RATE
Annual Bluegrass ( <i>Poa annua</i> )	to 4-leaf	6*	16
<ul style="list-style-type: none"> <li>• Apply under favorable soil moisture and humidity, which exists within a few days after rainfall or within 7 days after irrigation. Grass needs to be actively growing at time of application(s).</li> <li>• Apply at weed stage indicated on the label, as reduced control can be expected with more mature annual bluegrass.</li> <li>• Use the high rate under heavy grass pressure and/or when annual bluegrass is more mature.</li> <li>• Always add a crop oil concentrate at 1 qt./A by ground to the finished spray volume.</li> </ul>			
*Use a minimum of 10 fl. oz./A to control annual bluegrass in seedling and established alfalfa and mint.			

**DIRECTIONS FOR REDUCED RATE TO CONTROL  
SMALL ANNUAL GRASSES IN CANOLA, BEAN (DRY) & PEA (SHELLED) (INCLUDING  
SOYBEAN), EDIBLE PODDED LEGUME VEGETABLES, FLAX, MUSTARD SEED,  
BEAN & PEA (SUCCULENT SHELLED) AND SUGAR BEET  
(REDUCED RATE RECOMMENDATIONS NOT FOR USE IN CALIFORNIA)**

GRASS SPECIES	SCIENTIFIC NAME	WEED HEIGHT (Inches)	RATE FL.OZ/ ACRE <sup>(1)</sup>
Barnyardgrass	<i>Echinochloa crus-galli</i>	1 to 4	4
Broadleaf Signalgrass	<i>Brachiaria platyphylla</i>	1 to 4	5
<b>Crabgrass</b>			
Large	<i>Digitaria sanguinalis</i>	1 to 3*	4
Large	<i>Digitaria sanguinalis</i>	1 to 4*	5
Smooth	<i>Digitaria ischaemum</i>	1 to 3*	4
Smooth	<i>Digitaria ischaemum</i>	1 to 4*	5
Southern	<i>Digitaria ciliaris</i>	1 to 4*	5
Fall Panicum	<i>Panicum dichotomiflorum</i>	1 to 4	4
<b>Foxtail</b>			
Giant	<i>Setaria faberi</i>	1 to 4	4
Green	<i>Setaria viridis</i>	1 to 4	4
Millet	<i>Setaria italica</i>	1 to 4	5
Yellow	<i>Setaria glauca</i>	1 to 4	4
Seedling Johnsongrass	<i>Sorghum halepense</i>	1 to 6	5
Shattercane	<i>Sorghum bicolor</i>	4 to 10	4
Texas Panicum	<i>Panicum texanum</i>	1 to 4	5
<b>Volunteer Cereals</b>			
Barley	<i>Hordeum vulgare</i>	1 to 4	5
Oats	<i>Avena sativa</i>	1 to 4	5
Wheat	<i>Triticum aestivum</i>	1 to 4	5
Volunteer Corn**	<i>Zea mays</i>	4 to 12	4
Wild Proso Millet	<i>Panicum miliaceum</i>	1 to 6	4
Wild Oats	<i>Avena fatua</i>	1 to 4	5

- Apply only to actively growing grasses at recommended weed heights.
- Apply when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.
- Regrowth by tillering may occur if application is made when plants are stressed by lack of moisture, excessive moisture, low or high temperatures and/or under very low humidity.

\* Length of lateral growth

\*\* Not S.R. Corn

(1) Always add a crop oil concentrate at 1 qt./A by ground application to the finished spray volume.

## RECOMMENDATIONS FOR PERENNIAL GRASSES

GRASS SPECIES	WEED HEIGHT (Inches)	RATE FL. OZ./ ACRE	HIGH RATE
<b>Bermudagrass (<i>Cynodon dactylon</i>)</b>			
First Application	3 (or up to 6" runners)	8	16
Repeat Application(s) (if regrowth occurs)	3 (or up to 6" runners)	8	16
<b>Fescue, Tall (<i>Festuca arundinacea</i>)</b>			
First Application	4 to 8	8	16
Repeat Application(s) (if regrowth occurs)	4 to 8	8	16
<b>Foxtail Barley (<i>Hordeum jubatum</i>)</b>			
First Application	2 to 6	8	16
Repeat Application(s) (if regrowth occurs)	2 to 6	8	16
<b>Orchardgrass (<i>Dactylis glomerata</i>)</b>			
First Application	4 to 8	8	16
Repeat Application(s) (if regrowth occurs)	4 to 8	8	16
<b>Quackgrass* (<i>Elytrigia repens</i>)</b>			
First Application	4 to 12	8	16
Repeat Application(s) (if regrowth occurs)	4 to 12	8	16
<b>Rhizome Johnsongrass (<i>Sorghum halepense</i>)</b>			
First Application	12 to 24	8	16
Repeat Application(s) (if regrowth occurs)	6 to 18	6	8
<b>Wirestem Muhly (<i>Muhlenbergia frondosa</i>)</b>			
First Application	4 to 8	8	16
Repeat Application(s) (if regrowth occurs)	4 to 8	8	16
<b>Perennial Bluegrass*</b>			
<b>Roughstalk (<i>Poa trivialis</i>)</b>			
<b>Kentucky (<i>Poa pratensis</i>)</b>			
First Application	2 to 4	8	16
Repeat Application(s) (if regrowth occurs)	2 to 4	8	16
<b>Bentgrass* (<i>Agrostis</i> spp.)</b>			
First Application	2 to 4	-	16
Repeat Application(s) (if regrowth occurs)	2 to 4	-	16
<ul style="list-style-type: none"> <li>• Apply only to actively growing grasses at recommended weed heights.</li> <li>• Apply when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.</li> <li>• Use the high rate under heavy grass pressure and/or when grasses are at maximum height.</li> <li>• Do not apply more than 8 fl. oz./A of CLETHODIM 2 EC per application to the following crops: asparagus, carrot, cranberry, cucurbits, flax, fruiting vegetables (except tomato), garden beet, green onion, head &amp; stem brassica vegetables, herbs, hops, leaf petioles, leafy brassica greens, leafy greens, non-bearing food crops, root vegetables, safflower, sesame and strawberry. Do not apply more than 6 fl. oz./A of CLETHODIM 2 EC per application to canola or mustard seed.</li> </ul>			
<p>*Control of quackgrass, perennial bluegrass and bentgrass with CLETHODIM 2 EC may be enhanced by adding AMS at 2.5 to 4.0 lbs./A</p>			



## TANK MIXES

### USE INFORMATION

The labels for each of the herbicides recommended for tank mixing with CLETHODIM 2 EC are unique to the characteristics of those products and contain restrictions and limitations that may be more restrictive than the CLETHODIM 2 EC label in certain considerations. Those concerns may include, but are not limited to:

1. Geographic restrictions - all products are not registered for use in all areas and rates may vary from one region of labeled use to another;
2. Crop rotation restrictions;
3. Applicator certification requirements;
4. Worker safety rules (e.g. protective clothing, reentry time, posting);
5. Soil type or soil characteristics (e.g. pH, OM);
6. Maximum dosage or number of applications per season;
7. Rain free period required; or
8. Application timing (e.g. pre-harvest interval)
9. Do not exceed the total season rates.

**THE MOST RESTRICTIVE LABELING OF ANY PRODUCT USED IN A TANK MIX MUST BE FOLLOWED.**

### TANK MIX APPLICATION OF CLETHODIM 2 EC AND BROADLEAF HERBICIDES FOR CONTROL OF GRASSES AND BROADLEAF WEEDS

- Apply only to actively growing grass and broadleaf weeds at recommended height or growth stage listed on each label.
- Apply when the first grass or broadleaf weed species in a mixed population reaches the recommended height or growth stage for treatment.
- Apply under favorable soil moisture and humidity that exist a few days after rainfall or within seven days after irrigation.
- Always add the appropriate adjuvant to the spray mix at the rate recommended for each specific tank mix combination.
- Tank mix applications may sometimes result in reduced grass control and possible increases in crop injury as compared to either product used alone. If regrowth occurs, or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC, as specified in the respective size and rate tables.
- Do not tank mix CLETHODIM 2 EC when broadleaf weeds are tall and/or dense enough to prevent proper grass coverage.

### MIXING INSTRUCTIONS

1. Fill clean spray tank 1/2 to 2/3 of desired level with clean water.
2. While agitating, add the correct amount of CLETHODIM 2 EC. Agitation should create a rippling or rolling action on the water surface.
3. If tank mixing CLETHODIM 2 EC with other labeled herbicides, add water soluble bags first, followed by dry formulations, flowables, emulsifiable concentrates, and then solutions. Prepare no more spray mixture than is required for the immediate spray operation.
4. Add any required adjuvants (crop oil concentrate, non-ionic surfactant and/or nitrogen solution).
5. Fill spray tank to desired level with water. **Agitation should continue until all spray solution has been applied.**

Failure to agitate the spray solution may result in improper mixing of the herbicides and unsatisfactory weed control. Mixing and compatibility qualities should be verified by a jar test.

# **INFORMATION ON ANTAGONISM**

Tank mixes of CLETHODIM 2 EC with postemergence broadleaf herbicides have shown some reduction or failure to control certain grass species which would have otherwise been controlled when CLETHODIM 2 EC is applied alone. Activity of the postemergence broadleaf herbicide in the tank mix is not affected.

## **ALFALFA**

**Table 1. CLETHODIM 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR ALFALFA**  
(Refer to the recommendation tables above for specific grasses and growth stages)

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM 2 EC + 2,4-DB <sup>(4)</sup>	10 to 16 fl. oz. + Refer to 2,4-DB label	10 to 16 fl. oz. + Refer to 2,4-DB label	1%	1%
CLETHODIM 2 EC + PURSUIT DG <sup>(5)</sup> or PURSUIT <sup>(5)</sup>	10 to 16 fl. oz. + 1.08 to 2.16 oz. or 3 to 6 fl. oz.	-	1%	1%
CLETHODIM 2 EC + BUCTRIL® 2L <sup>(6)</sup> or BUCTRIL GEL <sup>(6,7)</sup>	10 to 16 fl. oz. + 1.0 to 1.5 pts. or 0.5 to 0.75 pt.	-	0.5%	0.5%

(1) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

(2) Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

(3) Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

(4) CLETHODIM 2 EC plus 2,4-DB may increase the severity of crop injury when tank mixed. Alfalfa plants will generally outgrow this temporary crop injury within a few weeks.

(5) Before using this tank mix, read and understand the PURSUIT or PURSUIT DG labels for geographical restrictions and restrictions regarding alfalfa growth stage and type. Failure to do so can result in crop injury to alfalfa. Do not feed, graze, or harvest alfalfa for 30 days following an application of PURSUIT to alfalfa.

(6) In the states of Washington, Oregon, Idaho, Montana, Wyoming, Colorado, Utah, Nevada and the western halves of North Dakota, South Dakota, Nebraska, and Kansas: The CLETHODIM 2 EC plus BUCTRIL or BUCTRIL GEL tank mix must be applied in the fall or spring to seedling alfalfa when the majority of the field has a minimum of 2 trifoliates. Unacceptable crop injury may occur to alfalfa seedlings less than the 2 trifoliolate leaf stage. CLETHODIM 2 EC plus BUCTRIL or BUCTRIL GEL applications made when temperatures are expected to exceed 80°F at (and 3 days following) application can result in unacceptable crop injury. In the states not listed above, apply in the fall or spring to seedling alfalfa when the majority of the field has a minimum of 4 trifoliolate leaves. When alfalfa stand is uneven and conditions favor leaf burn, unacceptable crop injury may occur to alfalfa in the 2 trifoliolate or smaller stage of growth. CLETHODIM 2 EC plus BUCTRIL or BUCTRIL GEL applications made when temperatures are expected to exceed 70°F at (and 3 days following) application can result in unacceptable crop injury. Crop leaf burn can occur following CLETHODIM 2 EC plus BUCTRIL or BUCTRIL GEL application. Warm, humid conditions may enhance leaf burn. New crop growth will not be affected.

(7) Do not apply when alfalfa is under moisture, temperature, insect or disease stress or has been stressed by other pesticide carryover or application.

## CANOLA

**Table 2. REDUCED RATE CLETHODIM 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR CANOLA**

(Refer to the recommendation tables above for specific grasses and growth stages.)

PRODUCT	APPLICATION RATES/ACRE		AMMONIUM SULFATE	
	ANNUAL GRASSES <sup>(1)</sup>	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM 2 EC <sup>(2)</sup> + LIBERTY <sup>(3)</sup>	4 to 5 fl. oz. + 34 fl. oz.	-	3.0 lbs.	3.0 lbs.

(1) Annual grasses and sizes controlled with these tank mixtures are those that are identified in the DIRECTIONS FOR REDUCED RATE TO CONTROL SMALL ANNUAL GRASSES table.  
 (2) Do not apply Clethodim 2 EC tank mix during or after bolting or flowering or crop injury may occur.  
 (3) For use only on LibertyLink® canola

## COTTON

**Table 3. CLETHODIM 2 EC TANK MIXED WITH COBRA® AND MSMA APPLIED POST DIRECTED TO COTTON**

PRODUCT <sup>(1)</sup>	APPLICATION RATES/ACRE <sup>(2)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> V/V	COMMENTS
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	
CLETHODIM 2 EC <sup>(4)</sup> + COBRA + MSMA (4.0 lbs./gal.) or MSMA (6.6 lbs./gal.)	6 to 8 fl. oz.	8 to 16 fl. oz.	1%	Reduce broadcast rate in proportion to the band area actually treated.
	See COBRA label for rates to control broadleaf weeds and height limitations for cotton. Refer to the CLETHODIM 2 EC label for weed height and species controlled.			
	See MSMA label for rates to control broadleaf weeds and height limitations for cotton. Refer to the CLETHODIM 2 EC label for weed height and species controlled.			

- (1) Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.  
 (2) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.  
 (3) Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.  
 (4) If at the time of application, grass height is so tall that post-directed applications cannot get good coverage over the top of the grassy weeds, then poor control may result and a second (non-post directed) application of CLETHODIM 2 EC may be necessary.

## COTTON (continued)

**Table 4. CLETHODIM 2 EC TANK MIXED WITH BUCTRIL 4 EC TO CONTROL EMERGED WEEDS IN BXN COTTON AS A BROADCAST APPLICATION**

PRODUCT <sup>(1)</sup>	APPLICATION RATE/ACRE <sup>(2)</sup>	CROP OIL CONCENTRATE PER ACRE <sup>(3)</sup>	COMMENTS <sup>(7)</sup>
	ANNUAL GRASSES		
CLETHODIM 2 EC + BUCTRIL 4 EC <sup>(4,5,6)</sup>	8 to 16 fl. oz.  See BUCTRIL 4 EC label for rates to control broadleaf weeds and height limitations for cotton.	1 qt.	See charts for grasses controlled.

(1) Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage.  
 (2) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC at the recommended rate with the appropriate amount of crop oil concentrate in a non-BUCTRIL tank mix.  
 (3) Always add a crop oil concentrate at 1 qt./A by ground in the finished spray solution.  
 (4) Applications of BUCTRIL 4 EC can be made only to cotton that has been genetically modified for crop tolerance to postemergence over-the-top applications of bromoxynil.  
 (5) Do not apply the CLETHODIM 2 EC plus BUCTRIL tank mix within 75 days of harvest.  
 (6) Do not exceed 2 applications of BUCTRIL before cotton is 12 inches tall and one application after 12 inches tall.  
 (7) Use a minimum of 10 gals. of spray solution per acre.

**Table 5. CLETHODIM 2 EC TANK MIXED WITH GLYPHOSATE TO CONTROL EMERGED GRASSES IN COTTON AS A BROADCAST APPLICATION**

PRODUCT	APPLICATION RATE/ACRE <sup>(1)</sup>		ADJUVANT		COMMENTS
	ANNUAL GRASSES	PERENNIAL GRASSES	Glyphosate formulation with built in adjuvant	Glyphosate formulation without built in adjuvant	
CLETHODIM 2 EC + GLYPHOSATE	6 to 8 fl. oz.  See glyphosate label for rates to control broadleaf weeds and height limitations for cotton.	8 to 16 fl. oz.	Non-ionic surfactant @ 0.125 to 0.25% v/v plus ammonium sulfate @ 8.5 to 17 lbs. per 100 gals. of carrier	Crop oil concentrate @ 1 pt./A plus ammonium sulfate @ 8.5 to 17 lbs. per 100 gals. of carrier	See charts for grasses controlled.  Use a minimum of 10 gals. of spray solution per acre.

(1) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC at the recommended rate with the appropriate amount of crop oil concentrate.

## BEANS (DRY AND SUCCULENT SHELLED)

**Table 6. CLETHODIM 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR BEANS (DRY AND SUCCULENT SHELLED)**

(Refer to the recommendation tables above for specific grasses and growth stages.)

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM 2 EC + BASAGRAN®	8 to 10 fl. oz. + 1.0 to 2.0 pts.	10 to 16 fl. oz. + 1 to 2 pts.	1%	1%

(1) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

(2) Broadleaf weed control may be reduced when grass populations are tall enough or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

(3) Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

## FLAX

**Table 7. REDUCED RATE CLETHODIM 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR FLAX**

(Refer to the recommendation tables above for specific grasses and growth stages)

PRODUCT	APPLICATION RATES/ACRE		CROP OIL CONCENTRATE	
	ANNUAL GRASSES <sup>(1)</sup>	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM 2 EC + BRONATE ADVANCED™ <sup>(2, 3)</sup>	4 to 5 fl. oz. + 11.4 fl. oz.	-	1 pt.	1 pt.
CLETHODIM 2 EC + BRONATE® <sup>(2, 3)</sup>	4 to 5 fl. oz. + 0.9 pt.	-	1 pt.	1 pt.
CLETHODIM 2 EC + BUCTRIL <sup>(2, 3)</sup>	4 to 5 fl. oz. + 1.0 pt.	-	1 pt.	1 pt.
CLETHODIM 2 EC + RHONOX® <sup>(2, 3)</sup>	4 to 5 fl. oz. + 0.25 to 0.5 pt.	-	1 pt.	1 pt.

(1) Annual grasses and sizes controlled with these tank mixtures are those that are identified in the DIRECTIONS FOR REDUCED RATE TO CONTROL SMALL ANNUAL GRASSES table.

(2) Do not apply Clethodim 2 EC tank mix during or after the bud stage or to ornamental flax or crop injury may occur.

(3) Do not apply tank mixes if temperatures are expected to exceed 85°F at (or 3 days following) application or crop injury may occur.

## SOYBEAN

**Table 8. CLETHODIM 2 EC TANK MIXES<sup>(3)</sup> TO CONTROL ANNUAL GRASSES WHEN USED AS A BURNDOWN IN NO-TILL SOYBEAN**

PRODUCT	PRODUCT RATE/ACRE <sup>(1)</sup>	GRASS HEIGHT (Inches)	CROP OIL CONCENTRATE /ACRE <sup>(2)</sup>	28%N OR 32%N QTS./A OR 2.5 TO 4.0 LBS. AMS
CLETHODIM 2 EC + 2,4-D ester <sup>(3)</sup>	3 fl. oz.	Foxtail 1 to 3 Fall Panicum 1 to 3	1 qt.	1 to 2 qts. or 2.5 to 4.0 lbs. AMS
	4 fl. oz.	Foxtail 1 to 4 Fall Panicum 1 to 4	1 qt.	1 to 2 qts. or 2.5 to 4.0 lbs. AMS
	6 to 8 fl. oz. + 0.5 lb. ai	(See Grass Chart for grasses claimed.)	1 qt.	1 to 2 qts. or 2.5 to 4.0 lbs. AMS

\*2,4-D ester should not be used where drift sensitive crops may be grown.

(1) If regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC according to the appropriate size and rate recommendations.

(2) Always use a crop oil concentrate at the listed rate in the finished spray volume.

(3) The following products can be tank mixed with CLETHODIM 2 EC plus 2,4-D ester: VALOR®, AUTHORITY® BROADLEAF, CANOPY XL®, DUAL® 8 E, DUAL II®, DUAL MAGNUM®, PROWL®, SENCOR®, SENCOR plus the DUAL products and TURBO®.

**Table 9. CLETHODIM 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR SOYBEAN (Refer to the recommendation tables above for specific grasses and growth stages.)**

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM 2 EC + COBRA	6 to 8 fl. oz. + 12.5 fl. oz.	8 to 16 fl. oz. + 12.5 fl. oz.	0.5 to 1%	1%
CLETHODIM 2 EC + BASAGRAN 4 SL	8 to 10 fl. oz. + 1 to 2 pts.	10 to 16 fl. oz. + 1 to 2 pts.	1%	1%
CLETHODIM 2 EC + Glyphosate (For use on Roundup Ready soybean only)	6 to 8 fl. oz. + 0.75 to 3.0 lb. ai	8 to 16 fl. oz. + 0.75 to 3.0 lb. ai	0.5 to 1% <sup>(4)</sup>	1% <sup>(4)</sup>
CLETHODIM 2 EC + ULTRA BLAZER®	6 to 8 fl. oz. + 1 to 1.5 pts.	6 to 8 fl. oz. + 1 to 1.5 pts.	0.5 to 1%	1%

continued

**Table 9. CLETHODIM 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR SOYBEAN**  
**(Refer to the recommendation tables above for specific grasses and growth stages.)**  
 (continued)

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM 2 EC + FLEXSTAR® HL <sup>(6)</sup>	6 to 8 fl. oz. Refer to the FLEXSTAR HL label for specific application rates.	8 to 16 fl. oz. Refer to the FLEXSTAR HL label for specific application rates.	1%	1%
CLETHODIM 2 EC + CLASSIC® 25 DG	8 to 10 fl. oz. + 0.5 to 0.75 oz.	10 to 16 fl. oz. + 0.5 to 0.75 oz.	1%	1%
CLETHODIM 2 EC <sup>(4)</sup> + PURSUIT® 70 DG	6 to 8 fl. oz. + 1.44 oz.	8 to 16 fl. oz. + 1.44 oz.	1%	1%
CLETHODIM 2 EC <sup>(5)</sup> + COBRA + CLASSIC 25 DG	8 to 10 fl. oz. + 6 to 8 fl. oz. + 0.5 to 0.75 oz.	-	0.5%	1%
CLETHODIM 2 EC <sup>(5)</sup> + COBRA + BASAGRAN 4 SL	8 to 10 fl. oz. + 6 to 10 fl. oz. + 1 to 1.5 pts.	-	0.5%	1%
CLETHODIM 2 EC <sup>(5)</sup> + COBRA + PURSUIT 70 DG	8 to 10 fl. oz. + 6 to 10 fl. oz. + 1.44 oz.	-	0.5%	1%
CLETHODIM 2 EC <sup>(5)</sup> + STORM®	8 to 10 fl. oz. + 1.5 pts.	-	0.5%	1%

continued

**Table 9. CLETHODIM 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR SOYBEAN**  
**(Refer to the recommendation tables above for specific grasses and growth stages.)**  
**(continued)**

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM 2 EC <sup>(5)</sup> + RESOURCE® + PURSUIT 70 DG	8 to 10 fl. oz. + 4 fl. oz. + 1.44 oz.	-	1%	1%
CLETHODIM 2 EC <sup>(5)</sup> + RESOURCE + BASAGRAN	8 to 10 fl. oz. + 4 fl. oz. + 1 pt.	-	1%	1%
CLETHODIM 2 EC <sup>(5)</sup> + RESOURCE + CLASSIC	8 to 10 fl. oz. + 4 fl. oz. + 0.5 oz.	-	1%	1%
CLETHODIM 2 EC <sup>(5)</sup> + COBRA + RESOURCE	6 to 8 fl. oz. + 6 fl. oz. + 4 fl. oz.	-	0.5%	1%
CLETHODIM 2 EC <sup>(5)</sup> + FIRSTRATE®	6 to 8 fl. oz. + 0.3 oz.	8 to 16 fl. oz. + 0.3 oz.	1%	-
CLETHODIM 2 EC <sup>(5)</sup> + COBRA + FIRSTRATE	6 to 8 fl. oz. + 6 to 8 fl. oz. + 0.3 oz.	8 to 16 fl. oz. + 6 to 8 fl. oz. + 0.3 oz.	1%	-
CLETHODIM 2 EC <sup>(5)</sup> + RAPTOR® (1 AS)	6 to 8 fl. oz. + 4 to 5 fl. oz.	-	1%	-
CLETHODIM 2 EC <sup>(5)</sup> + COBRA + RAPTOR (1 AS)	6 to 8 fl. oz. + 6 to 8 fl. oz. + 4 to 5 fl. oz.	-	1%	-

continued



**Table 9. CLETHODIM 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR SOYBEAN**  
(Refer to the recommendation tables above for specific grasses and growth stages.)  
(continued)

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM 2 EC <sup>(5)</sup> + SYNCHRONY® STS™	6 to 8 fl. oz. <sup>(7)</sup> + 0.5 oz./A	-	1 qt.	-
CLETHODIM 2 EC <sup>(5)</sup> + COBRA Herbicide + SYNCHRONY STS™	6 to 8 fl. oz. <sup>(7)</sup> + 4 to 8 fl. oz. + 0.5 oz.	-	1 pt.	-
CLETHODIM 2 EC <sup>(5)</sup> + RESOURCE	6 to 8 fl. oz. + 4 to 12 fl. oz.	-	1 qt.	-
CLETHODIM 2 EC <sup>(5)</sup> + FRONTROW™	8 to 10 fl. oz. + Refer to FRONTROW label for use rates.	-	1%	-
CLETHODIM 2 EC + FIRSTRATE + FLEXSTAR HL <sup>(5)</sup>	6 to 8 fl. oz. + 0.3 oz. + Refer to the FLEXSTAR HL label for specific application rates.	8 to 16 fl. oz. + 0.3 oz. + Refer to the FLEXSTAR HL label for specific application rates.	1%	-

(1) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

(2) Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

(3) Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

(4) The addition of 2.5 lb. of ammonium sulfate is required when CLETHODIM 2 EC is tank mixed with glyphosate. If the glyphosate formulation has a stand alone built in adjuvant, add 0.125% v/v non-ionic surfactant in place of crop oil concentrate. If the glyphosate formulation does not have a built in adjuvant system, add 0.5 to 1% crop oil concentrate for ground application and 1% v/v for aerial application.

(5) The addition of 1 to 2 qts./A of liquid fertilizer (10-34-0, 28%N, or 32%N) is recommended when CLETHODIM 2 EC is tank mixed with PURSUIT, RESOURCE, STORM, FIRSTRATE, SYNCHRONY, RAPTOR, FRONTROW, COBRA plus CLASSIC, COBRA plus BASAGRAN, COBRA plus PURSUIT, COBRA plus FIRSTRATE, COBRA plus SYNCHRONY, and COBRA plus RAPTOR. An equivalent amount (2.5 to 4.0 lbs./A) of spray grade ammonium sulfate (AMS) may be added in place of liquid fertilizer. Fertilizer adjuvants are to be added in addition to the crop oil concentrate.

(6) Refer to FLEXSTAR HL label for geographic and rotational restrictions.

(7) Annual grasses and sizes controlled with these tank mixtures are those that are identified in the DIRECTIONS FOR REDUCED RATE TO CONTROL SMALL ANNUAL GRASSES table.

## SOYBEAN (continued)

**Table 10. REDUCED RATE CLETHODIM 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR SOYBEAN (Refer to table for reduced rate use in canola, dry shelled bean & pea, edible podded legume vegetables, flax, mustard seed, soybean, succulent bean & pea and sugar beet recommendations for small annual grasses for specific grasses and growth stages)**

PRODUCT	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3,4)</sup> (V/V)	
	ANNUAL GRASSES <sup>(2)</sup>	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM 2 EC + FIRSTRATE	4 to 8 fl. oz. + 0.3 oz.	-	1%	1%
CLETHODIM 2 EC + PURSUIT 70 DG	4 to 6 fl. oz. + 1.44 oz.	-	1%	1%

(1) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

(2) Annual grasses and sizes controlled with these tank mixtures are those that are identified in the **DIRECTIONS FOR REDUCED RATE TO CONTROL SMALL ANNUAL GRASSES** table.

(3) Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

(4) The addition of 1 to 2 qts./A of liquid fertilizer (10-34-0, 28%N, or 32%N) is required when CLETHODIM 2 EC is tank mixed at reduce rates. An equivalent amount (2.5 to 4.0 lbs./A) of spray grade ammonium sulfate (AMS) may be added in place of liquid fertilizer. Fertilizer adjuvants are to be added in addition to the crop oil concentrate.

## PEANUT (INCLUDING PERENNIAL)

**Table 11. CLETHODIM 2 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR PEANUT (INCLUDING PEANUT) (Refer to the recommendation tables above for specific grasses and growth stages.)**

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
	ANNUAL GRASSES <sup>(2)</sup>	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM 2 EC + BASAGRAN	8 to 10 fl. oz. + 1.0 to 2.0 pts.	-	1%	1%
CLETHODIM 2 EC + ULTRA BLAZER	8 to 10 fl. oz. + 0.5 to 1.5 pts.	-	1%	1%
CLETHODIM 2 EC + STORM	8 to 10 fl. oz. + 1.5 pts.	-	1%	1%

(1) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

(2) Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

(3) Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

RECOMMENDATIONS FOR GRASS SUPPRESSION FOR HARVEST EFFICIENCY IN PEANUT (INCLUDING PERENNIAL) WITH CLETHODIM 2 EC			
GRASS SPECIES	WEED STAGE	RATE FL. OZ./ ACRE	HIGH RATE
Annual and perennial grasses that exceed height claimed for control on height charts "RECOMMENDATIONS FOR ANNUAL GRASSES" & "RECOMMENDATIONS FOR PERENNIAL GRASSES"	Up to and including grasses in the seed head stage.	16	32
<ul style="list-style-type: none"> <li>Do not apply as part of a tank mix when applying CLETHODIM 2 EC for grass suppression.</li> <li>Add a crop oil concentrate at 1 qt./A by ground to the finished spray volume.</li> </ul>			

## SUGAR BEET

**Table 12. CLETHODIM 2 EC TANK MIXED WITH STINGER® APPLIED TO SUGAR BEET**  
(Refer to the recommendation tables above for specific grasses and growth stages)

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
	Annual Grasses	Perennial Grasses	Ground	Air
CLETHODIM 2 EC + STINGER	6 to 8 fl. oz.	8 to 16 fl. oz.	1%	1%
See STINGER label for rates.				
<p>(1) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.</p> <p>(2) Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.</p> <p>(3) Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.</p>				

**Table 13. CLETHODIM 2 EC TANK MIXED WITH BETAMIX® or BETANEX® APPLIED TO SUGAR BEET**

PRODUCT <sup>(1)</sup>	WEEDS CONTROLLED		WEED HEIGHT (Inches)	APPLICATION RATE/ACRE <sup>(2)</sup>
	COMMON NAME	SCIENTIFIC NAME		
CLETHODIM 2 EC <sup>(3)</sup> + BETAMIX or BETANEX	Barnyardgrass	<i>Echinochloa crus-galli</i>	1 to 3	8 fl. oz.
	Foxtail	<i>Setaria</i> spp.	1 to 3	
	Foxtail Millet	<i>Setaria italica</i>	1 to 3	
	Wild Oat	<i>Avena fatua</i>	1 to 3	
	Wild Proso Millet	<i>Panicum miliaceum</i>	1 to 3	
			See BETAMIX label for rates to control broadleaf weeds. <b>No additives are recommended in the tank mix.</b>	
			See BETANEX label for rates to control broadleaf weeds. <b>No additives are recommended in the tank mix.</b>	

(1) Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

(2) Do not use crop oil concentrate. No additives are recommended in the tank mix. If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

(3) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC at full label rate with appropriate rate of crop oil concentrate.

**TABLE 14. CLETHODIM 2 EC PLUS BETANEX OR BETAMIX TANK MIX FOR THREE SEQUENTIAL APPLICATIONS FOR ANNUAL GRASS CONTROL (MICRO-RATE APPLICATION)**

PRODUCT	APPLICATION RATES/ACRE <sup>(1)</sup>		METHYLATED SEED OIL <sup>(2)</sup> (V/V)	
	ANNUAL GRASSES	GRASSES CONTROLLED (Inches)		
			GROUND	AIR
CLETHODIM 2 EC + BETANEX or BETAMIX	2 to 3 fl. oz.	Green Foxtail (1-2)	1.5%	1.5%
	+	Yellow Foxtail (1-2)		
	8 to 12 fl. oz. <sup>(3)</sup>	Barnyardgrass (1-2)		
	or	Wild Oat (1-2)		
	8 to 12 fl. oz. <sup>(3)</sup>	Volunteer Cereals (1-2)		

(1) Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

(2) Always use a methylated seed oil at the listed rate (but not less than 1 pt./A) in the finished spray volume.

(3) Use 8 fl. oz./A rate when sugar beet are in the cotyledon to 4 leaf stage. Rate can be increased up to 12 fl. oz./A when the smallest sugar beet plants in the field are in the 4 true leaf stage or larger.

#### **Micro-Rate Applications to Sugar Beet Use Information**

Multiple micro-rate applications of CLETHODIM 2 EC in tank mixtures with reduced rates of BETANEX or BETAMIX and methylated seed oils may be applied by air or ground equipment to sugar beet to control early germinating annual grasses listed above. The rate of BETANEX or BETAMIX must not exceed 0.12 lb. ai./A (broadcast application) when in combination with these spray adjuvants. Note that maximum rate allowed varies depending on crop growth stage. The use of wetting agents or spray adjuvants with conventional rates (0.73 to 1.22 lb. ai./A) or multiple low rate (0.24 to 0.73 lb. ai./A) applications of BETANEX or BETAMIX is prohibited on the BETANEX

and BETAMIX master label. Favorable climatic conditions (good conditions for plant growth and development) are essential for adequate weed control. All use precautions and restrictions on the BETANEX and BETAMIX master labels must be followed.

#### **Micro-Rate Multiple Applications of CLETHODIM 2 EC Tank Mixes**

Apply CLETHODIM 2 EC in broadcast applications only at a rate of 2 to 3 fl. oz./A in tank mixture with either BETANEX or BETAMIX following the directions for use on the tank mix partner label. A minimum of three sequential applications of 2 fl. oz./A or a minimum of 2 sequential applications of 3 fl. oz./A should be utilized for CLETHODIM 2 EC tank mixtures. A minimum of 3 sequential applications of BETAMIX or BETANEX should be used. Accurate timing is essential; make initial application immediately after weeds emerge, and make repeat applications on 5 to 7 day intervals. If weed control is not adequate due to climatic conditions, spray coverage or other factors, return to conventional application rates of CLETHODIM 2 EC (6 to 8 fl. oz./A) and add rates of BETANEX or BETAMIX as directed on their label. When using conventional rates of BETANEX or BETAMIX in tank mixtures with CLETHODIM 2 EC, a spray adjuvant is not recommended.

#### **Use Precautions for Micro-Rate Applications: (See CLETHODIM 2 EC, BETANEX and BETAMIX master label for further use precautions.)**

Not all weeds will be adequately controlled, even with favorable climatic conditions. Conventional rates of CLETHODIM 2 EC, BETANEX or BETAMIX and/or hand labor may be required if multiple micro-rate applications do not adequately control weeds. Plugging of spray nozzles may be encountered due to the potential for formation of a precipitate in the spray solution that is often associated with micro-rate applications. J. Oliver Products, LLC will not be responsible for any nozzle plugging that may occur with the use of multiple micro-rate applications. Methylated seed oils must not be added if the BETANEX or BETAMIX rate exceeds 0.12 lb. ai/A broadcast, as the addition of methylated seed oils could increase the possibility of crop injury at dosage rates greater than 0.12 lb. ai/A.

#### **GROUND APPLICATION**

Use of sufficient spray volumes and pressure is essential to ensure complete coverage. Use a minimum of 10 gals. and a maximum of 20 gals. of spray solution per acre. Spray pressures should reflect a minimum of 30 psi and a maximum of 60 psi at the nozzle. Do not use flood nozzles.

#### **AERIAL APPLICATION**

Use of sufficient spray volumes is essential to ensure complete coverage. Use a minimum of 5 gals. and a maximum of 15 gals. of spray solution per acre.

**Table 15. TANK MIX APPLICATION OF CLETHODIM 2 EC AND FUNGICIDES FOR CONTROL OF GRASS WEEDS AND DISEASES IN SUGAR BEET**

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)
	ANNUAL GRASSES	PERENNIAL GRASSES	
CLETHODIM 2 EC + EMINENT®	6 to 8 fl. oz. + 13 fl. oz.	8 to 16 fl. oz. + 13 fl. oz.	1%
(1) If grass regrowth occurs, or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC alone (without a tank mix fungicide) according to the appropriate size and rate recommendations.			
(2) Refer to CLETHODIM 2 EC and fungicide label for rates and weeds and diseases controlled.			
(3) Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.			

**Table 16. TANK MIX APPLICATION OF CLETHODIM 2 EC AND INSECTICIDES FOR CONTROL OF GRASS WEEDS AND INSECTS IN ALFALFA, COTTON, MINT, PEANUT (INCLUDING PERENNIAL), SOYBEAN AND SUNFLOWER**

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE (V/V) <sup>(3)</sup>	CROP					
	ANNUAL GRASSES	PERENNIAL GRASSES		Alfalfa <sup>(4)</sup>	Cotton	Mint <sup>(4,5)</sup>	Peanut	Soybean	Sunflower
CLETHODIM 2 EC + ORTHENE® 75 S or ORTHENE 97	6 to 8 fl. oz. + 0.33 to 1.33 lbs.  0.25 to 1.0 lb.	8 to 16 fl. oz. + 0.33 to 1.33 lbs.  0.25 to 1.0 lb.	1%		X	X	X		
CLETHODIM 2 EC + ORTHENE 90 S <sup>(6)</sup>	6 to 8 fl. oz. + 0.25 to 1 lb.	8 to 16 fl. oz. + 0.25 to 1 lb.	1%		X	X	X	X	
CLETHODIM 2 EC + DANITOL® 2.4 EC	6 to 8 fl. oz. + 10 2/3 to 16 fl. oz.	8 to 16 fl. oz. + 10 2/3 to 16 fl. oz.	1%		X		X		
CLETHODIM 2 EC + ASANA XL®	6 to 8 fl. oz. + Refer to ASANA XL label	8 to 16 fl. oz. + Refer to ASANA XL label	1%						X
CLETHODIM 2 EC + WARRIOR®	6 to 8 fl. oz. + Refer to WARRIOR label	8 to 16 fl. oz. + Refer to WARRIOR label	1%						X
CLETHODIM 2 EC + WARRIOR	10 to 16 fl. oz. <sup>(7)</sup> + Refer to WARRIOR label	10 to 16 fl. oz. + Refer to WARRIOR label	1%	X					
CLETHODIM 2 EC + BAYTHROID®	10 to 16 fl. oz. <sup>(7)</sup> + Refer to BAYTHROID label	10 to 16 fl. oz. + Refer to BAYTHROID label	1%	X					
CLETHODIM 2 EC + DIMETHOATE®	10 to 16 fl. oz. <sup>(7)</sup> + Refer to DIMETHOATE label	10 to 16 fl. oz. + Refer to DIMETHOATE label	1%	X					

continued

**Table 16. TANK MIX APPLICATION OF CLETHODIM 2 EC AND INSECTICIDES FOR CONTROL OF GRASS WEEDS AND INSECTS IN ALFALFA, COTTON, MINT, PEANUTS (INCLUDING PERENNIAL), SOYBEAN AND SUNFLOWER (continued)**

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE (V/V) <sup>(3)</sup>	CROP					
	ANNUAL GRASSES	PERENNIAL GRASSES		Alfalfa <sup>(4)</sup>	Cotton	Mint <sup>(4,5)</sup>	Peanut	Soybean	Sunflower
CLETHODIM 2 EC + LORSBAN®	10 to 16 fl. oz. <sup>(7)</sup> + Refer to LORSBAN label	10 to 16 fl. oz. + Refer to LORSBAN label	1 to 2 pt. <sup>(8)</sup>	X					
CLETHODIM 2 EC + POUNCE®	10 to 16 fl. oz. <sup>(7)</sup> + Refer to POUNCE label	10 to 16 fl. oz. + Refer to POUNCE label	1%	X					

(1) If grass regrowth occurs, or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC alone (without a tank mix insecticide) according to the appropriate size and rate recommendations.

(2) Refer to CLETHODIM 2 EC and insecticide label for rates and weeds and insects controlled.

(3) Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

(4) Certain insecticides may cause temporary phytotoxic symptoms on alfalfa and mint foliage. Refer to the insecticide label for information. It is suggested that prior to using any of these insecticide/herbicide tank mixtures, that a small area of the field be first and observations for crop injury be made prior to treating the whole field.

(5) The CLETHODIM 2 EC rate should be 6 to 8 fl. oz./A for annual grass control in baby mint, minimum of 8 fl. oz./A for annual control in established mint and 8 to 16 fl. oz./A for perennial grass control. Crop oil concentrate should be added at the rate of 2.0 pts./A.

(6) Insecticide tank mix use with ORTHENE 90 S in soybean is permitted only in a state having an approved Section 24(c) registration for ORTHENE 90 S use in soybean.

(7) The CLETHODIM 2 EC rate should be 6 to 8 fl. oz./A for annual grass control in seedling alfalfa.

(8) For the CLETHODIM 2 EC plus LORSBAN tank mix, reduce the adjuvant rate down to 1.0 pt./A when the LORSBAN rate is 1.0 pt./A or higher.

**Table 17. RECOMMENDATIONS FOR ROUNDUP READY VOLUNTEER CORN CONTROL IN ROUNDUP READY SOYBEAN WITH CLETHODIM 2 EC HERBICIDE TANK MIX**

Roundup Ready Volunteer Corn Height (inches)	CLETHODIM 2 EC Rate fl. oz./A	Glyphosate <sup>(1)</sup> rate for formulations <b>with</b> built in adjuvant	Adjuvant
<12	4	1.0 to 2.0 lb. ai./A (Approximately equivalent to 22 to 44 fl. oz./A of ROUNDUP Weather MAX)	Non-ionic surfactant @ 0.125 to 0.25% v/v plus ammonium sulfate @ 8.5 to 17 lbs. per 100 gals. of carrier
12 to 18	5		
18 to 24	6		

Roundup Ready Volunteer Corn Height (inches)	CLETHODIM 2 EC Rate fl. oz./A	Glyphosate <sup>(1)</sup> rate for formulations <b>without</b> built in adjuvant	Adjuvant
<12	4	Up to 2.0 lb. ai./A (Equivalent to 32 to 64 fl. oz./A of ROUNDUP Original)	Crop oil concentrate @ 1 pt./A plus ammonium sulfate @ 8.5 to 17 lbs. per 100 gals. of carrier
12 to 18	5		
18 to 24	6		

(1) Glyphosate formulation must be labeled for use on Roundup Ready soybean.

**THE MOST RESTRICTIVE LABELING OF ANY PRODUCT USED IN A TANK MIX MUST BE FOLLOWED.**

- Apply only to actively growing grass and broadleaf weeds at recommended height or growth stage listed on each label.
- Apply under favorable soil moisture and humidity which exist a few days after rainfall or within seven days after irrigation.
- Tank mix applications may sometimes result in reduced grass control. If regrowth occurs, or an additional flush of new grass emerges, make a second application of CLETHODIM 2 EC, as specified in the respective size and rate tables.
- Do not tank mix CLETHODIM 2 EC when broadleaf weeds are tall and/or dense enough to prevent proper grass coverage.
- This tank mix may be applied postemergence to ROUNDUP READY soybean up through the full flowering stage. Do not apply less than 60 days before harvest.
- Avoid contact with foliage, green stems, or fruit crops, or any desirable plants and trees, other than soybean with the ROUNDUP READY gene as severe injury or destruction will result.
- Do not allow the CLETHODIM 2 EC plus ROUNDUP to mist, drip, drift or splash onto desirable vegetation as minute quantities of the tank mix can cause severe damage or destruction to the crops, plants or other areas on which treatment was not intended. The likelihood of injury occurring from drift of this product is greatest when winds are gusty or in excess of 5 miles per hour. Even under lesser wind velocities, avoid conditions that allow spray drift to occur such as combinations of spray pressure and nozzle type that will result in fine particles (mist) that are likely to drift.

## **FALLOW LAND**

CLETHODIM 2 EC may be used to control annual and perennial grasses in land that has been left fallow the previous year and other non-producing agricultural areas. Apply CLETHODIM 2 EC at 6 to 8 fl. oz./A for annual grasses and 8 to 16 fl. oz./A for perennial grasses. When both grass and broadleaf weeds are the target pest, CLETHODIM 2 EC may be tank mixed with 2,4-D ester or BANVEL® SGF for broad spectrum control. When both annual and perennial grasses occur in the same field, use a minimum of 8 fl. oz./A. CLETHODIM 2 EC rate.

### **USE INFORMATION:**

- Use a minimum spray volume of 5 gals./A for aerial applications and 15 gals./A for ground applications.
- Apply only to actively growing grasses when the first grass reaches the recommended weed height as specified by the Recommendations for Annual and Perennial Grasses section of this label.
- Annual grasses that emerge after the CLETHODIM 2 EC application will not be controlled, and a second application may be necessary.
- The control of perennial grasses may require more than 1 application in non-tilled areas.
- Do not plant any crop for 30 days after application unless clethodim is registered for use in that crop.
- Do not apply to grasses that have tillered, formed seedheads or exceeded recommended growth stage.
- Do not use flood jet nozzles.
- Do not apply to drought stressed grasses.
- Do not mow area for 2 weeks prior to or after the CLETHODIM 2 EC application.



**TABLE 18. CLETHODIM 2 EC IN TANK MIXES TO CONTROL ANNUAL AND PERENNIAL GRASSES IN FALLOW LAND**

PRODUCT	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(2)</sup> (V/V)	
	Annual Grasses	Perennial Grasses	Ground	Air
CLETHODIM 2 EC + 2,4-D ester or BANVEL SGF	6 to 8 fl. oz. + 0.5 lb./A or See BANVEL SGF label for rates	8 to 16 fl. oz.	1%	1%
<p>(1) Refer to CLETHODIM 2 EC label for weed height and species control. Review BANVEL SGF and 2,4-D labels for crop restrictions, use rates and weeds controlled.</p> <p>(2) Always use a crop oil concentrate or methylated seed oil containing at least 15% emulsifier at the listed rate (but not less than 1 pt./A) in the finished spray volume.</p>				

RECOMMENDATIONS FOR GRASS SUPPRESSION IN NON-CROP AREAS WITH CLETHODIM 2 EC			
GRASS SPECIES	WEED STAGE	RATE FL. OZ./ ACRE	HIGH RATE
Annual and perennial grasses that exceed height claimed for control on height chart above.	Up to and including grasses in the seed head stage.	12	16
<ul style="list-style-type: none"> <li>Do not apply as part of a tank mix when applying CLETHODIM 2 EC for grass suppression.</li> <li>Add a crop oil concentrate at 1 qt./A by ground to the finished spray volume.</li> </ul>			

**TABLE 19. CLETHODIM 2 EC FOR THE CONTROL AND/OR SUPPRESSION OF TALL FESCUE IN NATIVE PRAIRIE WARM-SEASON GRASS RESTORATION PROJECTS**

PRODUCT	PRODUCT RATES	GRASS WEEDS CONTROLLED/SUPPRESSED		WEED STAGES
		Common Name	Scientific Name	
CLETHODIM 2 EC	10 to 12 fl. oz./A	Tall Fescue	<i>Festuca arundinacea</i>	4 to 6 inches tall (40 to 60% green-up)
<p><b>Adjuvant:</b> CLETHODIM 2 EC must be applied with crop oil concentrate at 1 qt./A, plus a spray grade ammonium sulfate at 2.5 to 4 lbs./A. Recommended Mixing Order: Thoroughly mix spray grade ammonium sulfate in water, add CLETHODIM 2 EC, then add crop oil concentrate.</p>				

**SPECIAL APPLICATION INSTRUCTIONS/PRECAUTIONS:**

- Burn or mow fields a minimum of 3 weeks prior to application to remove excess crop residue. Apply in the spring, at 40 to 60% tall fescue green-up, prior to emergence of warm-season grasses. Do not mow area for 2 weeks after the CLETHODIM 2 EC application.
- Apply in a minimum of 15 to 20 gals. of water per acre at a spray pressure of 40 to 60 PSI at the nozzle.
- Apply using flat fan or hollow cone nozzles. Do not use flood jet nozzles.
- Apply only to fields that have warm-season grasses established for 2 years. Applications of CLETHODIM 2 EC to emerged warm-season grasses may cause injury. Do not apply to warm-season grasses grown for seed.
- Do not graze treated fields or feed treated forage and or hay to livestock. Do not plant any crop for 30 days after application, unless clethodim is registered for use in that crop.

**NOTE:** CLETHODIM 2 EC applications are most effective if applied when average nighttime temperatures are consistently greater than or equal to 47°F.

**TABLE 20. CLETHODIM 2 EC FOR THE SUPPRESSION OF TALL FESCUE SEED-HEADS IN NON-PRODUCING AGRICULTURAL AREAS**

Product	Product Rate	Suppression	Application Timing
CLETHODIM 2 EC	1 1/2 to 2 fl. oz./A	Tall Fescue Seed-Heads ( <i>Festuca arundinacea</i> )	(50 to 90% Tall Fescue green-up)
<b>ADJUVANT:</b> CLETHODIM 2 EC must be applied with crop oil concentrate at 1 qt./A, plus a spray grade ammonium sulfate at 2.5 to 4 lb./A. <b>Recommended Mixing Order:</b> Thoroughly mix spray grade ammonium sulfate in water, add CLETHODIM 2 EC Herbicide, then add crop oil concentrate.			

**SPECIAL APPLICATION INSTRUCTIONS/PRECAUTIONS:**

- Apply at 50 to 90% tall fescue green-up.
- Use the higher CLETHODIM 2 EC rate if less tall fescue green matter is present.
- Do not mow area for two weeks after the CLETHODIM 2 EC application.
- Apply in a minimum of 15 to 20 gals. of water per acre at a spray pressure of 40 to 60 psi at the nozzle. Apply using flat fan or hollow cone nozzles. Do not use flood nozzles.
- 2,4-D ester maybe added to this tank mix for broadleaf control (see 2,4-D ester label for weeds controlled).
- Do not graze treated fields or feed treated forage and/or hay to livestock. Do not plant any crop for 30 days after application, unless clethodim is registered for use in that crop.

## ORNAMENTALS

For ornamental plant uses, CLETHODIM 2 EC can be used to control labeled grass weeds in greenhouses, lathouses, shadehouses, and around outdoor ornamentals, including nurseries, parks, roadside plantings, and structure landscapes.

### IMPORTANT

CLETHODIM 2 EC successfully controls weeds in newly transplanted and established non-grassy ornamentals. Plant tolerance to CLETHODIM 2 EC at labeled rates has been found to be acceptable for the indicated genera and species listed below. Due to variability within species, crop growth stage, environmental conditions, and application techniques, it is recommended that the user determine if herbicide can be used safely on a few plants prior to widespread application. Neither the seller nor the manufacturer of CLETHODIM 2 EC have investigated the safety factor to ornamental plants not listed on the label.

The following plants have shown a tolerance for CLETHODIM 2 EC applications:

### ORNAMENTAL TREES

COMMON NAME	SCIENTIFIC NAME
Alder, Red	<i>Alnus rubra</i>
Ash	<i>Fraxinus</i> spp.
Basswood	<i>Tilia</i> spp.
Birch, European White	<i>Betula pendula</i>
Birch, River	<i>Betula nigra</i>
Birch, White	<i>Betula papyrifera</i>
Crabapple, Flowering	<i>Malus halliana</i>
Dogwood, Flowering	<i>Cornus florida</i>
Golden Chain Tree	<i>Laburnum anagyroides</i>
Maples	<i>Acer</i> spp.
Mulberry, White	<i>Morus alba</i>
Oaks	<i>Quercus</i> spp.
Olive, Wild	<i>Elaeagnus angustifolia</i>
Redbud, Eastern	<i>Cercis Canadensis</i>
Sweet Gum, American	<i>Liquidambar styraciflua</i>

### GROUND COVERS

COMMON NAME	SCIENTIFIC NAME
Bugleweed, Carpet	<i>Ajuga reptans</i>
Ivy, English	<i>Hedera helix</i>
Japanese Spurge	<i>Pachysandra terminalis</i>
Lilyturf	<i>Liriope muscari</i>
Moneywort	<i>Lysimachia nummularia</i>
Mondo Grass, White	<i>Ophiopogon jaburan</i>
Mondo Grass Dwarf	<i>Ophiopogon japonicus</i>
Periwinkle, Lesser	<i>Vinca minor</i>

## GARDEN FLOWERS AND PLANTS

COMMON NAME	SCIENTIFIC NAME
Ageratum	<i>Ageratum</i> spp.
Alyssum*, Sweet	<i>Lobularia maritima</i>
Asparagus Fern	<i>Asparagus setaceus</i>
Bleeding Heart	<i>Dicentra spectabilis</i>
Cast Iron Plant	<i>Aspidistra elatior</i>
Chrysanthemum	<i>Chrysanthemum</i> spp.
Cinquefoil	<i>Potentilla</i> spp.
Coleus	<i>Coleus</i> spp.
Coralbells	<i>Heuchera sanguinea</i>
Cranesbill	<i>Geranium</i> spp.
Dahlia	<i>Dahlia</i> spp.
Daisy, Trailing African	<i>Osteospermum fruticosum</i>
Daylily	<i>Hemerocallis</i> spp.
Dusty Miller	<i>Senecio cineraria</i>
Euonymus	<i>Euonymus</i> spp.
Gazania	<i>Gazania</i> spp.
Geranium, House	<i>Pelargonium hortorum</i>
Heather, False	<i>Cuphea hyssopifolia</i>
Hosta	<i>Hosta fortunei</i>
Iris	<i>Iris</i> spp.
Jasmine Tobacco	<i>Nicotiana glauca</i>
Loosestrife	<i>Lythrum salicaria</i>
Marigold	<i>Tagetes</i> spp.
Partridgeberry	<i>Mitchella repens</i>
Petunia*	<i>Petunia hybrida</i>
Phlox	<i>Phlox</i> spp.
Pinks	<i>Dianthus</i> spp.
Portulaca	<i>Portulaca grandiflora</i>
Salvia	<i>Salvia</i> spp.
Saxifrage	<i>Saxifraga</i> spp.
Sedum	<i>Sedum</i> spp.
Selloum	<i>Philodendron selloum</i>
Snapdragon*	<i>Antirrhinum majus</i>
Sweet Flag	<i>Acorus gramineus</i>
Tickseed	<i>Coreopsis grandiflora</i>
Touch-Me-Not	<i>Impatiens</i> spp.
Verbena	<i>Verbena</i> spp.
Violet	<i>Viola</i> spp.
Yarrow, Common	<i>Achillea millefolium</i>
Zinnia	<i>Zinnia elegans</i>
*Slight foliage or flower speckling has been observed on these species.	

## SHRUBS

COMMON NAME	SCIENTIFIC NAME
Abelia	<i>Abelia</i> spp.
Anise, Purple	<i>Illicium floridanum</i>
Aucuba	<i>Aucuba</i> spp.
Azalea*	<i>Rhododendron</i> spp.
Bamboo	<i>Bambusa</i> spp.
Barberry, Japanese	<i>Berberis thunbergii</i>
Barberry, Magellan	<i>Berberis buxifolia</i>
Bayberry	<i>Myrica pensylvanica</i>
Bottlebrush	<i>Callistemon citrinus</i>
Boxwood, Common	<i>Buxus sempervirens</i>
Camellia, Common	<i>Camellia japonica</i>
Candytuft	<i>Iberis sempervirens</i>
Cleyera	<i>Cleyera japonica</i>
Coralberry	<i>Ardisia crenata</i>
Crape Myrtle	<i>Lagerstroemia indica</i>
Coyote Brush	<i>Baccharis pilularis</i>
Fig, Creeping	<i>Ficus pumila</i>
Gardenia	<i>Gardenia</i> spp.
Holly	<i>Ilex</i> spp.
Honeysuckle	<i>Lonicera</i> spp.
Indian Hawthorn	<i>Raphiolepis indica</i>
Jasmine	<i>Jasminum</i> spp.
Jasmine, Asiatic	<i>Trachelospermum asiaticum</i>
Jasmine, Star	<i>Trachelospermum jasminoides</i>
Juniper	<i>Juniperus</i> spp.
Lantana	<i>Lantana</i> spp.
Nandina* Bamboo, Heavenly	<i>Nandinia domestica</i>
Oleander, Common	<i>Nerium oleander</i>
Oregon Grape	<i>Mahonia aquifolium</i>
Photinia	<i>Photinia</i> spp.
Pittosporum	<i>Pittosporum</i> spp.
Podocarpus	<i>Podocarpus</i> spp.
Privet	<i>Ligustrum</i> spp.
Pyracantha	<i>Pyracantha</i> spp.
Rhododendron	<i>Rhododendron</i> spp.
Rose	<i>Spiraea bumalda</i>
Sweet Olive	<i>Osmanthus fragrans</i>
Viburnum	<i>Viburnum tinus</i>
Wisteria	<i>Wisteria</i> spp.
Yellow Sage/Shrub Verbena	<i>Lantana camara</i>
*Slight foliage or flower speckling has been observed on these species.	

RECOMMENDATIONS FOR ANNUAL GRASSES IN ORNAMENTALS				
GRASS SPECIES	SCIENTIFIC NAME	WEED* HEIGHT INCHES	RATE FL. OZ./ACRE <sup>(1)</sup>	HIGH RATE <sup>(2)</sup>
Barnyardgrass	<i>Echinochloa crus-galli</i>	2 to 8	8	16
Broadleaf Signalgrass	<i>Brachiaria platyphylla</i>	2 to 6	8	16
Brome				
California	<i>Bromus carinatus</i>	2 to 6	8	16
Cheat	<i>Bromus secalinus</i>	2 to 6	8	16
Downy	<i>Bromus tectorum</i>	2 to 6	8	16
Ripgut	<i>Bromus diandrus</i>	2 to 6	8	16
Canarygrass	<i>Phalaris canariensis</i>	1 to 4	8	16
Crabgrass				
Hairy	<i>Digitaria adscendens</i>	2 to 6**	8	16
Large	<i>Digitaria sanguinalis</i>	2 to 6**	8	16
Smooth	<i>Digitaria ischaemum</i>	2 to 6**	8	16
Southern	<i>Digitaria ciliaris</i>	2 to 6**	8	16
Crowfootgrass	<i>Dactyloctenium aegyptium</i>	2 to 6**	8	16
Fall Panicum	<i>Panicum dichotomiflorum</i>	2 to 8	8	16
Field Sandbur	<i>Cenchrus incertus</i>	2 to 6	8	16
Foxtail				
Giant	<i>Setaria faberi</i>	2 to 12	8	16
Green	<i>Setaria viridis</i>	2 to 8	8	16
Yellow	<i>Setaria glauca</i>	2 to 8	8	16
Goosegrass	<i>Eleusine indica</i>	2 to 6**	8	16
Itchgrass	<i>Rottboellia cochlin</i>	2 to 6	8	16
Junglerice	<i>Echinochloa colona</i>	2 to 6	8	16
Lovegrass (Stinkgrass)	<i>Eragrostis cilianensis</i>	2 to 6	8	16
Rabbitsfootgrass	<i>Polypogon monspeliensis</i>	1 to 4	8	16
Red Rice	<i>Oryza sativa</i>	1 to 3	8	16
Rygrass				
Hardy	<i>Lolium remotum</i>	2 to 6	8	16
Italian	<i>Lolium multiflorum</i>	2 to 6	8	16
Seedling Johnsongrass	<i>Sorghum halepense</i>	4 to 10	8	16
Shattercane	<i>Sorghum bicolor</i>	6 to 18	8	16
Southwestern Cupgrass	<i>Eriochloa gracilis</i>	2 to 6	8	16
Sprangletop				
Amazon	<i>Leptochloa panicoides</i>	2 to 6	8	16
Bearded	<i>Leptochloa fascicularis</i>	2 to 6	8	16
Mexican	<i>Leptochloa uninervia</i>	2 to 6	8	16
Red	<i>Leptochloa filiformis</i>	2 to 6	8	16
Texas Panicum	<i>Panicum texanum</i>	2 to 6	8	16
Volunteer Cereals				
Barley	<i>Hordeum vulgare</i>	2 to 6	8	16
Oats	<i>Avena sativa</i>	2 to 6	8	16
Rye	<i>Secale cereale</i>	2 to 6	8	16
Wheat	<i>Triticum aestivum</i>	2 to 6	8	16
Volunteer Corn	<i>Zea mays</i>	4 to 12	6	8
Volunteer Corn	<i>Zea mays</i>	12 to 24	8	16
Volunteer Grain Sorghum	<i>Sorghum bicolor</i>	8 to 12	8	16
Wild Oats	<i>Avena fatua</i>	2 to 6	8	16
Wild Proso Millet	<i>Panicum miliaceum</i>	2 to 10	8	16
Witchgrass	<i>Panicum capillare</i>	2 to 8	8	16
Woolly Cupgrass	<i>Eriochloa villosa</i>	2 to 8	8	16

- Apply only to actively growing grasses at recommended weed heights.
- Apply when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.
- Use the high rate under heavy grass pressure and/or when grasses are at maximum height.

\*Generally occurs between 3-leaf stage and tillering.

\*\*Length of lateral growth.

(1) 8 fl. oz./A = approximately 0.2 fl. oz./1000 sq. ft.

(2) 16 fl. oz./A = approximately 0.4 fl. oz./1000 sq. ft.

Add a non-ionic surfactant containing at least 80% active ingredient at the rate of 1 pt. per 50 gals. (0.25% v/v).

RECOMMENDATIONS FOR ANNUAL BLUEGRASS CONTROL WITH CLETHODIM 2 EC IN ORNAMENTALS			
GRASS SPECIES	WEED STAGE	RATE FL. OZ./ ACRE	HIGH RATE
Annual Bluegrass ( <i>Poa annua</i> )	to 4-leaf	6	16
<ul style="list-style-type: none"> <li>• Apply under favorable soil moisture and humidity that exists within a few days after rainfall or within 7 days after irrigation. Grass needs to be actively growing at time of application(s).</li> <li>• Apply at weed stage indicated on the label, as reduced control can be expected with more mature annual bluegrass.</li> <li>• Use the high rate under heavy grass pressure and/or when annual bluegrass is more mature.</li> <li>• Add a non-ionic surfactant containing at least 80% active ingredient at the rate of 1 pt. per 50 gals. (0.25% v/v).</li> </ul>			

RECOMMENDATIONS FOR PERENNIAL GRASSES			
GRASS SPECIES	WEED HEIGHT (Inches)	RATE FL. OZ./ ACRE <sup>(1)</sup>	HIGH RATE <sup>(2)</sup>
Bermudagrass ( <i>Cynodon dactylon</i> )			
First Application	3 (or up to 6" runners)	8	16
Repeat Application(s) (if regrowth occurs)	3 (or up to 6" runners)	8	16
Quackgrass ( <i>Elytrigia repens</i> )			
First Application	4 to 8	8	16
Repeat Application(s) (if regrowth occurs)	4 to 8	8	16
Rhizome Johnsongrass ( <i>Sorghum halepense</i> )			
First Application	12 to 24	8	16
Repeat Application(s) (if regrowth occurs)	6 to 18	6	8
Wirestem Muhly ( <i>Muhlenbergia frondosa</i> )			
First Application	4 to 8	8	16
Repeat Application(s) (if regrowth occurs)	4 to 8	8	16
<ul style="list-style-type: none"> <li>• Apply only to actively growing grasses at recommended weed heights.</li> <li>• Apply when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.</li> <li>• Use the high rate under heavy grass pressure and/or when grasses are at maximum height.</li> </ul>			
(1) 8 fl. oz./A = approximately 0.2 fl. oz./1000 sq. ft. (2) 16 fl. oz./A = approximately 0.4 fl. oz./1000 sq. ft. Add a non-ionic surfactant containing at least 80% active ingredient at the rate of 1 pt. per 50 gals. (0.25% v/v)			

## STORAGE AND DISPOSAL

### PROHIBITIONS

Do not contaminate water, food or feed by storage, disposal or cleaning of equipment.

Open dumping is prohibited.

### PESTICIDE STORAGE

Keep pesticide in original container. Do not put concentrate or dilute into food or drink containers.

Store in cool, dry place. Do not store diluted spray.

**Emergency Response:** For help with any spill, leak, fire or exposure involving this material, call day or night 1-800-892-0099.

### PESTICIDE DISPOSAL

Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

### CONTAINER DISPOSAL

Nonrefillable container. Do not refill or reuse container. Triple rinse container (or equivalent) promptly after emptying. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

ASANA® - Reg. TM of DuPont

AUTHORITY BROADLEAF® - Reg. TM of E.I. duPont de Nemours & Co. Inc.

BANVEL® - Reg. TM of BASF Corporation

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DUAL®, DUAL II® AND DUAL MAGNUM® - Reg. TMs of Syngenta Corporation

EMINENT® - Reg. TM of Sipcam Agro USA, Inc.

FIRSTRATE® - Reg. TM of Dow AgroSciences LLC

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RAPTOR® - Reg. TM of BASF Corporation

RESOURCE® - Reg. TM of Valent U.S.A. Corporation

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TURBO® - Reg. TM of Bayer Corporation

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## RETURNABLE KEG

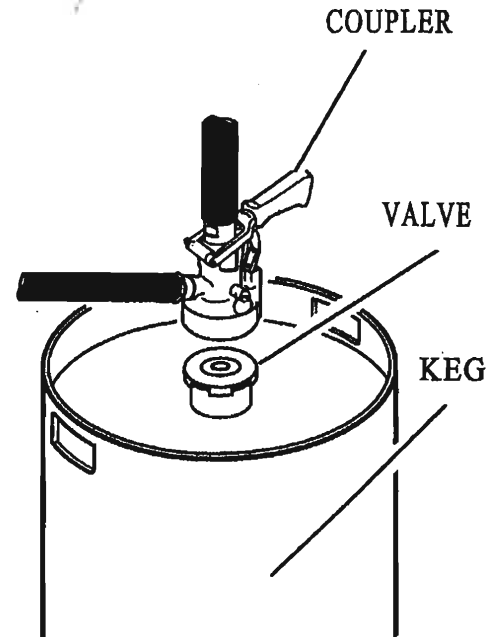
**Description:** This keg is a closed-system, refillable container designed for easy handling and convenient dispensing of product with no container disposal.

**Construction:** The keg is made of all stainless steel. Both the gaskets and seals are Viton and are compatible with the J. Oliver Products, LLC product.

**Pump System:** With the versatility of the keg, either a mechanical pump or an air pressure system may be used to dispense the product.

**Coupler:** A specific dry-disconnect coupler is required for dispensing product from the keg. This coupler is available through local agricultural equipment suppliers.

**Container Capacity:** 15 gallons or 56.7 liters (by weight)



## ATTENTION!

This is a closed-system container. Do not try to remove the valve from the keg. The coupler required for removal of product is available from local agricultural equipment suppliers. The keg contains tamper evident seals that, if broken, will incur a fee for the user of the keg. Both the coupler and the valve are designed for one-way operation only. Never try to pump any type of material back into the keg.

## DIRECTIONS FOR USE

The proper coupler must be attached and engaged before removing any product from the keg. Either a mechanical pump or an air pressure system may be used and connected to the 1-inch NPT thread on the top of the coupler.

**IMPORTANT!** Attach a hose or pump to the coupler before engaging coupler. This will prevent the user from being splashed in the event that pressure build-up in the keg forces liquid up through the coupler.

### To attach and engage the coupler:

1. Pull top of black dust cover back to expose head of valve. The bottom ring of the black dust cover will still be attached to the neck of the valve. Save the dust cover for reuse when returning keg.
2. Before engaging the coupler, securely attach a hose or pump to the threaded connection.
3. Twist coupler onto valve on keg and engage coupler by pulling handle straight out to unlock and then pushing handle down into lower position to open internal valve. Handle will automatically lock in place.
4. Secure and engage coupler by pulling handle straight out to unlock and then pushing handle down into lower position to open internal valve. Handle will automatically lock in place.
5. You are now ready to begin the pumping operation.

### To remove coupler from container:

1. Release coupler by pulling handle straight out to unlock and then lifting handle into upper position. Handle will automatically lock in place.
2. Lift coupler from keg. As coupler clears top of valve, pull coupler sideways and lift it off the valve.
3. Wipe valve off and replace dust cover.
4. Flush coupler with water.
5. Wipe coupler and store in a clean place.
6. Properly dispose of cleaning towels and rinsate.

## RETURNING KEGS

Clean the outside of the keg with water or soap before returning the keg to the distributor. Leave all J. Oliver Products, LLC product labels and stickers securely attached. All J. Oliver Products, LLC product labels, stickers and other information must remain on the keg in order to comply with both State and Federal regulations.

All J. Oliver Products, LLC kegs are tracked using the individual keg serial number stamped in the top of the keg. Distributors are responsible for these kegs that have been assigned to them. Return this keg to the distributor from which it was purchased. Notify the distributor if the keg cannot be returned by the specific time.

**21-Day Screen Completed by**  
**Contractor**

**21-Day Expires on** 2-26-10

**Jacket #** 83222-GN  
**MRID#** \_\_\_\_\_

**Content Screen: Recommended to**  
**Pass/Fail**

**86-5 Review: Passed/Failed/NA**

**Transfer This Jacket to:**

LINDA ARRINGTON

PM-25

# PRIA 2 – 21 Day Content Screen Review Worksheet

(EPA/OPP Use Only)

3/23/09

21 Day Screen Start Date: 2-5-10

Experts In-Processing Signature: MF Harrington Date 2-17-10 Fee Paid: Yes ☒

Division management contacted on issues No ☐ Yes ☐ Date \_\_\_\_\_

EPA Reg. Number: <u>83222-GN</u>		EPA Receipt Date: <u>2-5-10</u>				
Items for Review				Yes	No	N/A*
1	Application Form (EPA Form 8570-1)(link to form) signed & complete including package type			X		
2	Confidential Statement of Formula all boxes completed, form signed, and dated (EPA Form 8570-4) (Link to form)			X		
	a) All inerts (link to <a href="http://www.epa.gov/opprd001/inerts/">http://www.epa.gov/opprd001/inerts/</a> ), including fragrances, approved for the proposed uses (see Footnote A)	yes	no			
3	Certification with Respect to Citation of Data (EPA Form 8570-34) (Link to form) completed and signed (N/A if 100% repack)					X
	Certificate and data matrix consistent					X
	If applicant is relying on data that are compensable, is the offer to pay statement included. (see Footnote B)	yes	no			
	If applicable, is there a letter of Authorization for exclusive use only.					
4	Formulator's Exemption Statement (EPA Form 8570-27) (Link to form) completed and signed (N/A if source is unregistered or applicant owns the technical)			X		
	Data Matrix (EPA Form 8570-35) (Link to form) both internal and external copies (PR 98-5) (Link to PR 98-5) completed and signed (N/A if 100% repack)					X
5	a) Selective Method (Fee category experts use)	yes	no			
	b) Cite-All (Fee category experts use)					
	c) Applicant owns all data (Fee category experts use)					
6	5 Copies of Label (link to <a href="http://www.epa.gov/oppfead1/labeling/lrm/">http://www.epa.gov/oppfead1/labeling/lrm/</a> ) (Electronic labels on CD are encouraged and guidance is available)( link to <a href="http://www.epa.gov/pesticides/regulating/registering/submissions/index.htm#labels">http://www.epa.gov/pesticides/regulating/registering/submissions/index.htm#labels</a> )			X		

7	Is the data package consistent with PR Notice 86-5 (link to PRN 86-5)			X
8	Notice of Filing (link to <a href="http://www.epa.gov/pesticides/regulating/tolerance_petitions.htm">http://www.epa.gov/pesticides/regulating/tolerance_petitions.htm</a> ) included with petitions (link to <a href="http://www.epa.gov/pesticides/regulating/tolerances.htm">http://www.epa.gov/pesticides/regulating/tolerances.htm</a> )			X
9	If applicable for conventional applications, reduced risk rationale (link to <a href="http://www.epa.gov/opprd001/workplan/reducedrisk.html">http://www.epa.gov/opprd001/workplan/reducedrisk.html</a> )			X
10	Required Data (link to <a href="http://www.epa.gov/pesticides/regulating/data_requirements.htm">http://www.epa.gov/pesticides/regulating/data_requirements.htm</a> ) and/or data waivers. See Footnote C.			
	a) List study (or studies) not included with application			

**Comments:**

KC □ No Studies Associated w/ jacket

Jacket Passed

\* N/A – Not Applicable

**Footnotes**

A. During the 21 day initial content review, all CSFs will be reviewed to determine whether all inerts listed, including fragrances, are approved for the proposed uses. If an unapproved inert is identified, the applicant must either 1) resolve the inert issue by, for example, removing the inert, substituting it with an approved inert, submitting documentation that EPA approved the inert for the proposed pesticidal uses, correcting mistakes on the CSF, etc. or 2) provide the data to support OPP approval of the inert or 3) withdraw the application. Removing or substituting an inert ingredient will require a new CSF and may require submission of data. All information, forms, data and documentation resolving the inert issue must have been received by the Agency or the application withdrawn within the 21 day period, otherwise, the Agency will reject the application as described below.

To successfully complete this aspect of the 21 day initial content screen, applicants are **strongly encouraged** to verify that all inert ingredients have been approved for the application's uses **even if a product is currently registered** by consulting the inert Web

site [link to <http://www.epa.gov/opprd001/inerts/lists.html>] and if the inert is not approved, to **obtain the necessary inert approval prior to submitting an application to register a pesticide product containing that inert ingredient**. Some inert ingredients are no longer approved for food uses or certain types of uses. The name and/or CAS number on a CSF must match the name and CAS number on this web site. Simple typographical errors in the name or CAS number have resulted in processing delays.

If an inert is not listed on the inert ingredient web site and the applicant believes that the inert has been approved, the applicant should contact the Inert Ingredient Assessment Branch (IIAB) at [inertsbranch@epa.gov](mailto:inertsbranch@epa.gov) and resolve the issue. Copies of the correspondence with IIAB resolving the issue should accompany the application. All new inerts except PIP inerts are reviewed by IIAB. The IIAB should also be contacted for any questions on what supporting data needs to be submitted for and the Agency's inert review process. Questions on PIP inerts should be directed to the Chief of Microbial Pesticides Branch [Link to [http://www.epa.gov/oppbppd1/biopesticides/contacts\\_bppd.htm](http://www.epa.gov/oppbppd1/biopesticides/contacts_bppd.htm)].

When a brand, trade, or proprietary name of an inert ingredient is listed on a CSF, additional information such as an alternate name of the inert, CAS number or other information [link to <http://www.epa.gov/opprd001/inerts/tips.pdf>] must also be included to enable the Agency to determine if it has been approved. Each component of an inert mixture (including a fragrance) must be identified. In some cases, the supplier of the mixture or fragrance may need to provide this information to the Agency. Prior to the Agency's receipt of an application, applicants must arrange with a proprietary mixture or fragrance supplier to provide the component information to the Agency or promptly upon EPA's request. If the inert ingredients in a proprietary blend (including fragrances) cannot or are not identified or provided within the 21-day content review period, the Agency will reject the application.

During the 21 day content review, applicants should submit information to the individual identified by the Agency when the applicant is informed of an unapproved inert.

#### **Unapproved Inerts Identified on CSFs**

##### **All applications except conventional new products and PIPs**

Once an unapproved inert is identified on a CSF, the Agency will contact the applicant with the following options:

1. Correct the application by, for instance, correcting the inert's identity or CAS number, providing documentation that the inert has been approved, or removing the unapproved inert from the CSF or replacing it with one that is approved for the application's uses; or
2. Submit the information and data needed for the Agency to approve the unapproved inert. If this option is selected and implemented, the Agency may request an extension in the PRIA decision review timeframe to accommodate the inert review/approval process;

3. Withdraw the application (the Agency retains 25% of the full fee for the fee category estimated); or

If none of these options is selected and implemented by the applicant within the 21 day content review period, the Agency will reject the application and retain 25% of the full fee of the category identified.

#### Conventional New Product Applications

When the Registration Division identifies an unapproved inert on a CSF with an application for a new product that the applicant has not identified as requiring an inert approval (R311, R312 or R313), it will contact the applicant with the following options:

1. Correct the application by, for instance, correcting the inert's identity or CAS number, providing documentation that the inert has been approved, or removing the unapproved inert from the CSF or replacing it with one that is approved for the application's uses; or
2. Submit the information and data needed for the Agency to approve the unapproved inert, including any required petition to establish or amend a tolerance or exemption from a tolerance. (This option may change the PRIA category for the application, which could require a longer decision review time and a larger fee. If additional fees are due, they must be received by the Agency within the 21 day content review period.)
3. Withdraw the application (the Agency retains 25% of the full fee for the fee category estimated); or

If none of the above options is selected and implemented during the 21-day content-review period, the Agency will reject the application and retain 25% of the appropriate fee for the new product-inert approval category.

#### PIP Applications

When the Biopesticide and Pollution Prevention Division identifies an unapproved inert on a PIP CSF and a request to approve the inert does not accompany the application, it will contact the applicant with the following options:

1. Correct the application by, for instance, correcting the spelling or name of the inert to that in 40 CFR 174, or providing documentation that the inert has been approved; or
2. Submit the information and data needed for the Agency to approve the unapproved inert. If an inert ingredient tolerance exemption petition is required, the petition must be received by the Agency and the B903 fee paid within the 21 day period. If this option is selected and implemented, the Agency will discuss harmonizing the timeframe for both actions.

3. Withdraw the application (the Agency retains 25% of the full fee for the fee category estimated); or

If none of the above options is selected and implemented during the 21 day content review period, the Agency will reject the application and retain 25% of the fee.

B. A policy on documentation of offers to pay is still being developed, however, for a me-too or fast track (similar/identical) new product, R300 or A530, an application without the necessary authorizations of offers to pay will be placed into either R301 or A531. The Agency recommends that authorizations of offers to pay be submitted with other PRIA applications to avoid delays in the Agency's decision.

C. Biopesticide applicants are advised to contact the Agency and discuss study waivers prior to submitting their application to the Agency. Documentation of such discussions should be submitted with the study waiver.





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

February 16, 2010

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

OPP Decision Number: D-427854  
EPA File Symbol or Registration Number: 83222-GN  
Product Name: CLETHODIM 2 EC HERBICIDE  
EPA Receipt Date: 05-Feb-2010  
EPA Company Number: 83222  
Company Name: J. OLIVER PRODUCTS, LLC

LAWRENCE A. MILLER  
BIOLOGIC, INC.  
J. OLIVER PRODUCTS, LLC  
115 OBTUSE HILL ROAD  
BROOKFIELD, CT 06804-

SUBJECT: Receipt of Registration Application Subject to Registration Service Fee

Dear Registrant:

The Office of Pesticide Programs has received your application and certification of payment. If you submitted data with this application, the results of the PRN-86-5 screen will be communicated separately. During the administrative screen, the Office of Pesticide Programs has determined that this Action is subject to a Pesticide Registration Service Fee as defined in the Pesticide Registration Improvement Act.

The Action has been identified as Action Code: R300

NEW PRODUCT;ME-TOO PRODUCT FAST TRACK;

No additional payment is due at this time.

If you have any questions, please contact the Pesticide Registration Service Fee Ombudsman at (703) 305-6249.

Sincerely, *Teresa Downs*  
Front End Processing Staff  
Information Technology & Resources Management Division

**Fee for Service**

W  
{866981L~

This package includes the following

- ☒ New Registration
- ☐ Amendment

- ☐ Studies?      ☐ Fee Waiver?
- ☐ volpay    % Reduction: \_\_\_\_\_

for Division

- ☐ AD
- ☐ BPPD
- ☒ RD

Risk Mgr. 25

Receipt No.

S-

866981

EPA File Symbol/Reg. No.

83222-GN

Pin-Punch Date:

2/5/2010

- ☐ This item is NOT subject to FFS action.

Action Code:

Requested: R300

Granted: R300

Amount Due: \$ 1,365.<sup>00</sup>

Parent/Child Decisions:

☒ Inert Cleared for Intended Use

☐ Uncleared Inert in Product

Reviewer: Xle Bo D      Date: 2-16-10

Remarks:

100% repack

Receipt for Section 3

S: 868989 Resubmission: ☐ Yes ☒ No

Regulatory Type: Product Registration - Section 3 Fee For Service: ☒ Yes ☐ No

Application Type: New Registration Billable: ☒ Yes ☐ No

Company: 83222 J. GLYER PRODUCTS, LLC V

Risk Manager: Registration Division, Risk Management Team 23

Product #: 83222-GN Product Name: CLETHODIM 2 EC HERBICIDE

Override#:

Me Too Section 3: Me Too Product Name:

Application Date: 28-Jan-2010 OPP Rec'd Date: 05-Feb-2010

Front End Date: 12-Feb-2010 Risk Manager Send Date:

FFS Due Date: Negotiated Due Date:

OPP Target Date:

Fast Track: ☐ New Ingredient: ☐

Receipt Description: Registration of a new pesticide product

Form A: ☐ Signature Date: Form B: ☐ Signature Date:

New Ingredient Request Date:

New Ingredient Received Date:

Receipt Content: CSF Paper Label

View/Edit

Print Letter

Enter More Information

Tracking

\*Product ingredient source information may be entitled to confidential treatment\*

# **FEE FOR SERVICE**

## Jane Miller

---

**From:** paygovadmin@mail.doc.twai.gov  
**Sent:** Thursday, February 04, 2010 2:18 PM  
**To:** jmill@biologicconsulting.com  
**Subject:** Pay.Gov Payment Confirmation

THIS IS AN AUTOMATED MESSAGE. PLEASE DO NOT REPLY.

Your transaction has been successfully completed.

### Transaction Summary

Application Name: PRIA Service Fees  
Pay.gov Tracking ID: 250BB3IH  
Agency Tracking ID: 74100084306

Account Holder Name: Jane M. Miller  
Transaction Type: Sale  
Transaction Amount: \$1,365.00  
Billing Address: 115 Obtuse Hill Road  
City: Brookfield  
State/Province: CT  
Zip/Postal Code: 06804  
Country: USA  
Card Type: Visa  
Card Number: \*\*\*\*\*0690  
Transaction Date: Feb 4, 2010 2:18:16 PM

Decision Number:  
Registration Number:  
Company Name: J. Oliver Products, LLC  
Company Number: 83222  
Action Code: R300



United States  
Environmental Protection Agency  
Washington, DC 20460

☒ Registration  
☐ Amendment  
☐ Other

OPP Identifier Number

## Application for Pesticide - Section I

1. Company/Product Number 83222- <del>XXX</del> GN	2. EPA Product Manager J. Tompkins	3. Proposed Classification <input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) Clethodim 2 EC Herbicide	PM# 25	
5. Name and Address of Applicant (Include ZIP Code) J. Oliver Products, Inc. 3187 Robertson Gin Road Hernando, MS 38632 <input type="checkbox"/> Check if this is a new address	6. Expedited Review. In accordance with FIFRA Section 3(c)(3)(b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. <span style="background-color: black; color: black;">XXXXXXXXXX</span> Product Name <span style="background-color: black; color: black;">XXXXXXXXXX</span>	

## Section - II

<input type="checkbox"/> Amendment - Explain below.	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application.
<input type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - Explain below.

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

This application for a new pesticide product will fall within the category on Table 4 - Registration Division: New Products as published in the August 2008 Federal Register. This product is further defined under EPA No. 300; CR No. 44. This product is a "Re-Pack". The PRIA fee for this application is \$1,365.

Jane Miller Tel: (203) 740-1200; Fax: (203) 740-1220; Email: jmill@biologicconsulting.com

## Section - III

1. Material This Product Will Be Packaged In:			
Child-Resistant Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Unit Packaging <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If "Yes" Unit Packaging wgt. 48 oz. No. per container 8	Water Soluble Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No If "Yes" Package wgt. No. per container	2. Type of Container <input type="checkbox"/> Metal <input checked="" type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____
* Certification must be submitted			
3. Location of Net Contents Information <input checked="" type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container 1 gal.	5. Location of Label Directions <input checked="" type="checkbox"/> on label
6. Manner in Which Label is Affixed to Product <input checked="" type="checkbox"/> Lithograph <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled		<input type="checkbox"/> Other _____	

## Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)		
Name Jane M. Miller	Title Agent	Telephone No. (Include Area Code) 203-740-1200
<b>Certification</b> I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.		6. Date Application Received (Stamped) 222
2. Signature 	3. Title Agent	
4. Typed Name Jane M. Miller	5. Date January 28, 2010	



January 28, 2010

Document Processing Desk (REGFEE)  
Office of Pesticide Programs (7504P)  
US Environmental Protection Agency  
One Potomac Yard  
2777 S. Crystal Drive  
Room S-4900, 4<sup>th</sup> Floor  
Arlington, VA 22202

Attention: Mr. James Tompkins (PM #25)

RE: Clethodim 2 EC Herbicide, EPA Reg. No. 83222-XX  
Application for Pesticide Registration – Re-Pack

Dear Mr. Tompkins:

On behalf of J. Oliver Products, Inc. we are submitting this Application for Pesticide Registration for the above mentioned product. The subject product is a 100% "re-pack" of [REDACTED]

The following documents are enclosed to process this registration:

Volume 1 Administrative Materials

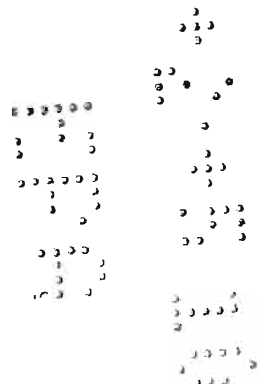
- Application for Pesticide Registration (EPA Form 8570-1)
- Formulator's Exemption Statement (EPA Form 8570-27)
- Confidential Statement of Formula (EPA Form 8570-4)
- Five (5) copies of draft labeling

This application for a new pesticide product will fall within the category on Table 4 - Registration Division: New Products, EPA No. R300; CR No. 44. The PRIA fee for this application is \$1,365.

Should you have any questions, or wish to reach me, please feel free to contact our office at 203-740-1200.

Sincerely,

Jane Miller  
Agent to J. Oliver Products, Inc.



\*Product ingredient source information may be entitled to confidential treatment\*





FILE SYMBOL.	
REGISTRATION NO.	83222-EN

**Do Not Write Comments,  
Formula, or Parts of Formula  
on This Envelope**

[illegible]

It shall be unlawful—for any person to use for his own advantage or to reveal, either than to the Secretary, or officials or employees of the United States Department of Agriculture or other Federal agencies, or to the courts in response to a subpoena, or to physicians, and in emergencies to pharmacists and other qualified persons, for use in the preparation of antidesics, in accordance with such directions as the Secretary may prescribe, any information relative to formulas or products acquired by authority of Section 4 of the "Federal Insecticide, Fungicide, and Rodenticide Act."

